Clinical Lectures ON GRAVES' DISEASE.

Delivered at the Hospital for Consumption and Diseases of the Chest, Brompton,

BY HECTOR W. G. MACKENZIE, M.A., M.D.,
ASSISTANT PHYSICIAN TO THE HOSPITAL, MEDICAL REGISTRAR TO ST. THOMAS'S HOSPITAL, AND ASSISTANT PHYSICIAN AND PATHOLOGIST TO THE ROYAL FREE HOSPITAL.

LECTURE I.

GENTLEMEN,—Several reasons determined the subject of these lectures. In the first place, I happen to have under my care at the present time a large number of cases of Graves' disease; secondly, I believe that a good many of its symptoms, recognised only of late years, are by no means so widely known as from their importance and frequency they merit; and thirdly, I feel sure that through a want of knowledge of these symptoms many cases of what is known as the incomplete type of the disease fail to be recognised. I propose in this first lecture to discuss in particular these less well known symptoms and to show you a series of cases mostly of the kind I have referred to; while in the second lecture I shall say something about the course and terminations, the pathology and treatment, illustrating my remarks by bringing forward cases of recovery and of long duration.

Nearly all writers who have reported cases of this disease have mentioned fright or other severe mental shock and over-fatigue as exciting causes of the malady. Gowers,[1] for instance, mentions that a number of cases occurred in Alsace and Lorraine after the Franco-German war. In my own cases I have noted the following among others as the events from which the patients dated their illnesses: a severe burn; being thrown out of a trap; an unusually long and difficult confinement; unexpectedly finding her father dead; having her house broken into by burglars; a drunken man falling in at the door unexpectedly; terror in a solitary house. I shall refer again to this matter of fright when touching on the pathology.

Quinsy and rheumatism are antecedent or coincident in a significant number of cases. Out of some forty cases I have noted quinsy in nine and acute rheumatism in five. This agrees with the experience of other observers. Thus, West[2] has recorded rheumatism in eight cases out of thirty-eight, and the occurrence of quinsy is mentioned in a good many published cases.

The association of the disease with other nervous disorders, such as epilepsy, hysteria, chorea, diabetes, and insanity, whether in the patient or in other members of the same family, has often been noticed.

The disease itself sometimes occurs in several members of the same family. I have four pairs of sisters under my care now, while sisters of two other patients have been affected. Two sisters, a cousin, and an aunt;[3] a mother and three sisters[4]; and three sisters;[5]—have been reported as all suffering from the malady. Oesterreicher's[6] case, however, puts all these in the shade. A hysterical woman had ten children, eight of whom suffered from the disease; and one of the latter had four granddaughters also affected by it.

The proportion of men to women is very variously stated. Charcot,[7] in a recent lecture, says the disease is only a little less frequent in men than in women. Eulenberg[8] puts the proportion as one male to two females; Trousseau[9] gives it as eight to forty-two; while Hardy[10] says the disease attacks women almost exclusively. It is difficult to explain these differences. My own experience is that it is uncommon among men. Only three men, as against twenty women, have been admitted to St. Thomas's Hospital during the last twelve years. The only case in a male I am able to show you is one of recovery.

[1] Diseases of Nervous System, vol. ii. [2] Oph. Soc. Trans., 1886.
[3] Cheadle: St. George's Hospital Reports, 1872-74.
[4] Wild: Brit. Med. Jour., vol. i. 1886.
[5] Hale White: Brit. Med. Jour., vol. ii. 1886.
[6] See Dejérine, Thèse d'Agrégation, 1886.
[7] Gazette des Hôpitaux, 1885. [8] Ziemssen's Cyclopædia.
[9] Clinical Lectures, vol. i. [10] Gazette des Hôpitaux, 1883.

It is unnecessary for me to go over the old familiar ground and to describe to you the well-known triad of symptoms. Of the three, by far the most important and most constant is the palpitation; next in consequence comes the enlargement of the thyroid; while the exophthalmos, which is the most obvious, is the least essential. I shall show you cases where there has never been enlargement of the thyroid, or where the enlargement has disappeared, and also cases where the same may be said of exophthalmos. Palpitation, however, is not invariably experienced by the patient, and sometimes one finds a very rapid cardiac action without the patient being uncomfortably conscious of it. It is generally, however, the chief trouble they complain of, and in some cases is so conspicuous that they say their heart beats all over the body. I would remind you that the enlargement of the thyroid is nearly always more apparent on the right side than on the left. The thyroid is not an exactly symmetrical body; the right lobe, according to Quain[11] (and this I have verified for myself), is larger than the left, and hypertrophy must magnify the disparity.

I have said that of the three symptoms exophthalmos is the least constant. It was not mentioned in the three cases first described by Graves,[12] and I think, if present, he would have noticed it, for he immediately goes on to describe one in which it did exist. In three out of nine well-marked cases of the disease in the wards of St. Thomas's Hospital of recent years it has been absent. It is probably on account of the mistaken idea that exophthalmos is essential that so many incomplete cases, in which absence is the rule, are not recognised. When it does exist, exophthalmos is often not quite equal on the two sides, and several purely unilateral cases have been reported. Von Graefe's sign—the lagging behind of the upper lid when the patient looks down—is by no means constant, but is useful sometimes as a confirmatory symptom. In one of the cases I shall show you it will be seen to be well marked, although there is no exophthalmos. The same may be said of Stellwag's sign—the retraction of the upper lid. Time prevents me from dwelling on these so-called cardinal symptoms, which to many minds still constitute the whole of the disease. Let me remind you now of what Trousseau has said of their absence. "I believe," he says, "that the disease may be foreseen, and does really exist in a great number of instances without there being exophthalmos, bronchocele, or extreme frequency of the pulse." The additional symptoms the disease has been found to possess have made it much easier to recognise these incomplete forms, in which it frequently exists.

First and foremost among these new symptoms is trembling. The failure until a few years ago to recognise this really cardinal symptom is one of the most curious instances of intellectual blindness. If a patient the subject of this disease hold out his hands, a tremor in them is very perceptible, consisting of vibratory movements of small amplitude, and with a period of about one-eighth or one-ninth of a second. It is exactly the same tremor which is noticed when the muscles are over-fatigued. The tremor is a communicated one, affecting not the fingers individually, but the whole extremity, and sometimes the whole body, so that it may be observed in the lower extremity as well as in the upper. It usually affects both sides of the body; but in some cases it is limited to, or is very much more marked in, one extremity. Besides this tremor, which is more or less insensible, the patients generally suffer from attacks of trembling, either with or without palpitation, which attacks bear the same relation to the tremor that the palpitation does to the rapid cardiac action. The tremor is generally more obvious when the patient is flurried, and sometimes may be noticed only under such conditions. It is much more perceptible when the patient is sitting up than when lying down. It, as a rule, only interferes with the more delicate movements of the hand, such as writing or sewing, such an operation as carrying a cup to the lips being performed perfectly steadily. I have found this symptom a most valuable assistance to diagnosis, and it has generally first attracted my attention to the nature of the malady in the absence of exophthalmos. I have not yet met with a case in which it has been altogether absent. Thanks to Marie[13] and Charcot,[14] this symptom seems pretty well known in France, but as yet the same cannot be said of this country. Lately a case of Graves' disease was shown at a provincial medical society and the

[11] Anatomy, vol. ii. [12] Clinical Lectures.
[13] Thèse de Paris, 1883. [14] Loc. cit.

tremors which were noticed were attributed to alcoholism. At the discussion at the Ophthalmological Society in 1886, the only allusion made to it was Dr. West's mention of trembling in two cases. Madison Taylor[15] on the other side of the Atlantic, recently says he has rarely seen this muscular tremor. It is mentioned in no text-book that I know of, with the exception of Gowers'. It was impossible, however, that a symptom such as this could have altogether escaped notice, although not recognised as a cardinal part of the disease. Trousseau remarks of one of his patients that on account of trembling she was unable to sign her daughter's marriage contract. Charcot mentioned it in 1856 in the earliest recorded case in France. I have met with a few other allusions to trembling in cases reported[16] before 1882, and I was much interested to find in the records of St. Thomas's ten or more years ago that trembling had been noted in several cases.

Two of my patients having complained to me of painful cramps, I was led to inquire as to whether they occurred in my other cases, with the result that I found they were very frequent. Of fifteen patients of whom I inquired, thirteen said they were subject to these cramps, and another who did not own to having cramps had had attacks in which the hands became rigid and the thumbs were turned inwards. In some cases the hands only are attacked, but more frequently the feet and legs are affected. The cramps generally come on at night in bed. One of my patients, who has been ill twenty years, is subject to cramps, and has also had attacks of more persistent spasm of the hands resembling tetany.

Another trouble these patients have is a tendency of the legs to give way at the knees, so that they with difficulty avoid falling. I have noted this in twelve of my cases. This giving way of the legs is well known as occurring in myxœdema, and it is interesting to notice that tremors and contractures have also been noted in the subjects of the latter disease and in animals which have had the thyroid gland extirpated. A decided feebleness in the lower extremities, almost amounting to paraplegia, was observed by Warburton Begbie[17] in two or three aggravated cases of the disease. Ballet[18] has observed hemiplegia and paraplegia, but thinks these arose from coincident neurosis. Dr. Bristowe's[19] patient Marion had hemiplegia, hemianæsthesia, and contracture of the paralysed arm. A patient of Dr. Murchison, who died at St. Thomas's in 1876, had hemiplegia supposed to be hysterical.

Occasionally some weakness of the ocular muscles exists. Slight ptosis of both eyelids was noted by West in one case. I have seen weakness of the external recti producing double vision on looking to the extreme right or left. Complete ophthalmoplegia externa existed in the case of Marion, and Ballet[20] has recorded an exactly parallel case.

Slight elevations of temperature have been noted by numerous observers since Trousseau's time. Lately Bertoye,[21] writing on this point, says that fever arises suddenly and from insignificant causes, that it is unstable and of variable intensity, and that its appearance is generally of bad augury. A recent English writer[22] says elevation of temperature is a constant symptom, but this is not my experience. The temperature has generally been taken morning and evening in the cases we have had at St. Thomas's, and seldom has there been any rise. In a case which proved fatal the temperature was taken every four hours, and was invariably subnormal. I have taken the temperatures of my out-patients from time to time without finding any higher temperature than 99·4° in the mouth. On the other hand, in the case of Marion, the temperature was that of fever during all the time she was under observation—a period extending to many years. A subjective feeling of heat is certainly not uncommon, and I have noted this in thirteen of my cases. It is most troublesome at night when the patient is in bed. With this there is intolerance of heat and great tolerance of cold. Patients generally say they feel best in cold weather, and cannot endure hot. The myxœdematous patient, on the other hand, is very intolerant of cold. Flushing of the head and neck is very common. You will probably notice in several of the patients I shall show you how the face and neck become scarlet as soon as observation is directed to them. This, however, occurs not only under observation, but at other times the patient's face and neck become burning hot. I have noted it in nineteen of my cases.

Sweating is also frequent, and is sometimes excessive. I have noticed that the hands are generally cold and clammy. In one of my patients the sweating of the hands was a source of great annoyance, as interfering with her work.

Perhaps the most interesting affections of the skin are the pigmentary changes. Begbie[23] a good many years ago alluded to the bronzing of the face of one of his patients, and Trousseau remarked of one of his cases that the skin, formerly transparent, had become brown and freckled. General bronzing of the skin was noticed in a fatal case in St. Thomas's in 1880. At the Ophthalmological Society, West and Carrington[24] each brought forward a similar case. Other observations of this condition have from time to time been published, but the most interesting are the cases, six in number, recently published by Drummond.[25] I am inclined to believe with Drummond that this pigmentation of the skin is not uncommon. Five of my patients exhibit it, and in these there is a remarkable agreement with the cases I have referred to. The parts generally affected have been the face, the neck, the sides of the chest, the abdomen, the lumbar region, the axillæ, and the flexures of the arms and thighs. The colour of these parts has been of a more or less dark brown, contrasting strongly with the normal colour of the skin as shown on the front of the chest. Irregular patches of deep pigment on the face, such as in the illustration accompanying Drummond's paper, I have not met with except limited to the eyelids; nor have I seen leucoderma, the existence of which Reynaud[26] found in five cases, and of which examples have been published by Lucy[27] and others in this country. A greasy condition of the skin similar to that noticed in general paralytics I have observed sometimes.

The nutrition of the hair seems generally affected. Most of my patients say their hair has become very thin and comes out very much, and its scantiness and dryness have been very conspicuous in many of them. On account of this several have had it cut quite short. Falling out of the hairs of the eyebrows and eyelids was recorded in a case by Burney Yeo,[28] while Barnes[29] reports one in which the hair fell out nearly universally.

Œdema of the subcutaneous cellular tissue, generally limited to the lower extremities, is said by Millard[30] to be of frequent occurrence. Several of my patients have mentioned that their legs swell towards evening; but in only two cases have I seen œdema without there being some well-known cause to explain it. In a significant proportion I have found varicose veins in the lower extremities. Œdema of the eyelids has also been noticed. Gowers mentions its presence after recovery. In three of my cases of old standing it is present, and in two other cases at St. Thomas's I have seen it.

A great diminution in the electrical resistance of the body has been demonstrated by Vigouroux[31] and Charcot,[32] who think that this symptom may prove useful in the diagnosis of incomplete forms of the disease. This is a point of much interest, and I hope to be able on a subsequent occasion to have more to say on the subject, but as yet I have made no clinical observations with regard to it. For an account of it let me refer you to a recent paper by Wolfenden in vol. xxxix. of the *Practitioner*.

Considerable emphasis used to be laid on the presence of anæmia, which Begbie[33] considered to be the *fons et origo* of the disease. Very many patients, however, are not at all anæmic, although some, especially the younger, are so to a certain degree, and I have one or two patients at present in whom the anæmia is the most obvious symptom. Wilks[34] has cautioned us to guard against mistaking cases of Graves' disease for ordinary anæmia, as in the former no improvement results from treatment generally beneficial in the latter.

Epistaxis, I might here mention, is not a very infrequent

[15] Phil. Med. and Surg. Rep., 1888.
[16] Morell Mackenzie: Trans. Clin Soc., vol. i. Reynaud: Archiv Gén. de Méd., 1875, vol. i. Russell: Med. Times and Gaz., 1876.
[17] New Syd. Soc., 1882. [18] Rev. de Méd., 1883.
[19] Diseases of Nervous System. [20] Rev. de Méd., 1888.
[21] Thèse de Lyon, 1888. [22] Wolfenden: Journal of Laryngology, 1888.
[23] Contr. to Pract. Med., 1862. [24] Trans., loc. cit.
[25] Brit. Med. Jour., vol. i. 1887. [26] Arch. Gén. de Méd., loc. cit.
[27] Brit. Med. Jour., vol. ii. 1887.
[28] Ibid., vol. i. 1877. [29] Ibid., vol. i. 1889.
[30] Thèse de Paris, 1888.
[31] Le Progrès Méd., 1887, p. 316. [32] Gaz. des Hôpitaux, 1889.
[33] Op. cit. [34] Guy's Hospital Reports, 1870.

occurrence. Trousseau and Cheadle[35] give characteristic examples. I would specially call your attention to the occurrence of this symptom at the onset of the disease, as in a patient of Warburton Begbie.[36] Marion, to whom I have so often referred, had frequent hæmorrhages from the nose, ears, and mouth. In seven of my patients there is a history of epistaxis, and in a recent case at St. Thomas's there were two attacks. One or two of these patients have complained of a full stopped-up feeling in the nose lasting for months and one on this account has been under treatment at a special hospital. The occurrence of pulmonary, intestinal, meningeal, and cerebral hæmorrhages is mentioned by Trousseau.

General emaciation, as attending severe cases, has been pointed out by nearly every writer. It has been noticed in nearly all such cases which have been in the wards of St. Thomas's. Sometimes it is extreme. Even patients only slightly affected remark that they are losing flesh. You will notice it in all the more serious cases I show you. Emaciation is generally a sign that the disease is active; when extreme it is of bad augury, but still it does not prevent hope of recovery.

The mental condition of the patient is generally, although not always, as profoundly altered as her bodily state. She exhibits an irritability, excitability, and fidgetiness foreign to her nature, which sometimes she is as ready to recognise and own to as she is uncomfortably conscious of its existence. She is frequently low-spirited and lachrymose. She is so nervous that she starts at any unusual sound, and is profoundly affected by good or evil tidings. A knock at the door or the arrival of a telegram may be sufficient to upset her for hours. A girl I recently saw was put into a state of great alarm at the sight of the cardiograph. Not infrequently such patients are suspicious; often they are discontented. The experience of their nurses is that they are particularly trying to their patience and temper. They are the embodiment of what Scott has said of women generally—"uncertain, hard to please, and variable." The sleep is generally disturbed. The patient is restless, and is apt to wake up in a fright. Sometimes she walks in her sleep, sometimes she wakes and finds she has jumped out of bed. The moral nature is sometimes perverted, the patient being spiteful, untruthful, and intolerant of contradiction. In not a few cases the mind is more profoundly affected and the patient becomes quite insane. Melancholia and mania are the usual types. The peculiarity of her appearance, Savage[37] suggests, may give origin to an idea that she is being watched, and form a starting-point for the former type of insanity.

The remaining features of the disease I can only allude to very briefly. The respiratory troubles are nervous cough and paroxysms of dyspnœa attended with aggravation of all the symptoms, blueness of the face, swelling of the vessels of the neck, and immediate asphyxia. Such attacks[38] have at times proved fatal. It is probable that, like similar attacks which come on in the course of a thoracic aneurysm in the vicinity of the larger air tubes, they are due directly to pressure on the trachea. The affections of the digestive system appear to be of nervous origin. The appetite is capricious, sometimes it is ravenous, sometimes it is altogether lost, as, according to Ferrier,[39] happens in monkeys after removal of the occipital lobes. Vomiting, unrelated to the ingestion of food, and diarrhœa are not infrequent, the latter, perhaps, being the more common. In eight of my cases there has been a relaxed condition of the bowels. Intermittent albuminuria, generally considerable and sometimes excessive, was remarked by Warburton Begbie[40] in several cases of this disease. Ballet[41] and West have met with similar cases. The coincidence of glycosuria has been recorded by many observers.[42] Polyuria has also been noted. In none of my own cases, however, have I found anything unusual in regard to the urine. Irregular menstruation, amenorrhœa, and menorrhagia are extremely common, although in a few cases the function is normal.

I must now very shortly touch on the different forms which the disease may assume. In a perfectly typical case, all four leading symptoms, with a greater or smaller number of the others, will be present. The absence of goitre or exophthalmos makes the disease a little less complete, while the presence of only two out of the four is the typical incomplete form. The mode of development of the symptoms throws light on these incomplete forms. In some cases, all four, with other troubles, appear more or less simultaneously. More commonly one or two develop first, and the disease may never go any further. Thus tremor and palpitation, with secondary symptoms in many cases, form the first stage of the disease, exophthalmos or goitre, or both, following at intervals. If the latter do not develop, then the case remains an incomplete one. In five of my complete cases the exophthalmos was noticed for a year or more before any other trouble. I have seen at least two cases where goitre had existed for several years before the other symptoms developed; and West mentions a similar case where enlargement of the thyroid was noticed at fourteen, palpitation at eighteen, and exophthalmos at twenty-two years of age. I have a patient at the present time who has had a goitre of the parenchymatous variety for six years, in whom persistent frequency of the pulse makes me suspect the advent of Graves' disease.[43] In many cases the patient has been unconscious of the enlargement of the thyroid until it has been pointed out to her, and accordingly it is difficult to say when it commenced. The incomplete forms of the disease which the physician is likely to see are those in which the palpitation and trembling are the combination, while the oculist is most likely to be consulted for such forms as commence with the eyes.

The cases which I now propose to show will illustrate the various symptoms and the different types of the disease. At the present time I have over thirty patients attending here and at the Royal Free Hospital who are suffering from Graves' disease. Of these, six are complete and typical cases presenting all four chief and many of the secondary symptoms, in eight more the only absent symptom is exophthalmos, in five others the absent symptom is the goitre, while in the remainder—the typical incomplete cases—both goitre and exophthalmos are absent. I shall reserve till next lecture, when I shall be discussing the course and prognosis of the disease, the more chronic of these cases, and shall now show you some typical specimens of each variety.

The first case I have to show is one in which all the symptoms are present; but when the patient first came to the hospital, over twelve months ago, they were all slight. After attending two months she had become such a typically incomplete case that she left off attending, thinking herself cured. The second case is one which, while complete, has some of the symptoms so slightly marked that they might easily be overlooked; and the third case has just missed being complete.

CASE 1. *Palpitation, trembling, giving way of legs, cramps, irritability, bronzing of skin, &c.; exophthalmos; enlargement of thyroid; improvement under treatment; subsequent recrudescence.*—Julia P——, servant, unmarried, aged twenty-three, came to the Brompton Hospital on April 18th, 1889, on account of shortness of breath and palpitation on hurrying for the previous three months. There was noticeable prominence of the eyes, the heart's action was rapid and irregular, and the thyroid was distinctly enlarged, especially its isthmus and right lobe. Before coming to the hospital she consulted with a friend about the swelling of the throat, and was comforted with the assurance that "the bass voice was coming." There were characteristic fine tremors of the hands when held out, and her legs trembled both when standing and stooping. Increased irritability and irregular menstruation were the chief of her other troubles. The only points of interest in her history were the occurrence of a fit two years previously, accompanied by bleeding from the nose and an attack of rheumatism one year ago. Her brother had suffered from fits, and her sister from quinsies. I treated her with ten minims of tincture of belladonna and five grains of citrate of iron and ammonia three times a day. On May 2nd she told me her legs gave way under her, and she fell down. This happened again a week later. The tremors in the hands persisted. On June 13th I could make out no perceptible enlargement of the thyroid. She ceased attending after July 25th, being then better in every respect, and considering herself cured. I heard from her again in the beginning of November, 1889. She then wrote: "I am not getting on so well as I ought. My eyes are

[35] Op. cit. [36] Op. cit.
[37] Guy's Hospital Reports, 1875.
[38] Shingleton Smith: Med. Times and Gaz., vol. i. 1878; Bristowe: Op. cit. [39] Functions of Brain.
[40] Op. cit. [41] Rev. de Méd., 1883.
[42] Brunton: St. Bart.'s Hosp. Rep., 1874. Wilks: THE LANCET, vol. i. 1875. O'Neill: Ibid., vol. i. 1878. Ballet: Op. cit.

[43] I may now add that since this was written my suspicion has been confirmed by further observation of the patient. The patient has emaciated very much, typical tremors have developed, she has become extremely irritable, and she has many of the minor symptoms.

getting very bad again, and my throat also. Very much given to trembling." She is now again attending the hospital, and her condition presents features of great interest. The trembling and palpitation quite unfit her for work. The tremors are, as before, very marked in the hands. The thyroid is considerably enlarged, and the eyes are quite as prominent as when she first attended. There is no von Graefe's sign. There is still a tendency for the legs to give way. She is very subject to painful cramps in the legs, and is very intolerant of heat, from which she suffers much more than from cold. She does not sweat much, but is liable to flushings. The legs swell at night, but this may result from the varicose veins which she has. Her face and neck are noticeably of a dark-brown colour, and there are some even darker patches on the neck. The colour is a great contrast to that of the chest. The abdomen and the lower part of the back, the axillæ, and the folds of the arms, are also coloured a dark brown. The patient herself noticed this darkening of her skin, and told her mother of it, although she did not think it worth while mentioning to me until I made remarks about the colour of the face. Her hair is thin and comes out "in handfuls." She suffers from cough, which she attributes to the uncomfortable feeling due to the goitre. She has a large appetite, and becomes inconveniently hungry half an hour after a meal. She frequently has sickness and diarrhœa. She is not anæmic, but is losing flesh and looks thinner than when she last attended. The catamenia are now regular, but scanty. She is still irritable, and her spirits are variable. She sleeps fairly soundly, but frequently wakes up with a start.

CASE 2. *Graves' disease; very slight exophthalmos and thyroid enlargement.*—This patient, Mrs. P——, aged thirty-five, first attended on Nov. 11th, 1889, complaining of trembling, palpitation, an altered appearance of the eyes, and irritability of temper for the previous six or eight months. The trembling had been experienced for two years, but had been much worse since the other symptoms came on. Her hands trembled characteristically when they were extended, and at times shook so much that it was impossible to write or work. The eyes were only slightly prominent, but there was a distinct von Graefe's sign and some retraction of the upper lid. Palpitation did not occur so frequently as trembling, and the pulse-rate when I took it was only a little over 90. The thyroid was slightly enlarged. She described herself as being "shockingly irritable and low-spirited," and formerly was quite the reverse. She had no patience with her children. Her sleep was generally disturbed. She frequently had cramps in the hands. She had flushings and clammy perspirations of the hands and feet, and was very intolerant of heat, which she "couldn't stand at all." The hair had come out very much. The appetite was poor, the bowels variable, and the catamenia irregular. Two years ago she received a severe shock at finding her child, as she thought, dead in her arms, and during the "Ripper" scare had another great fright. Six or eight months before I saw her she had epistaxis.

CASE 3. *Palpitation, trembling, cramps, giving way of legs, slight proptosis, von Graefe's sign, &c.; doubtful thyroid enlargement.*—The patient, Mrs. N——, aged forty, first came to the hospital on April 1st, 1889. She complained of very troublesome palpitation for the previous two or three years, and of trembling, especially when flurried, for six or seven months. In the hands, especially in the left, there were very marked tremors. In the eyes, although no perceptible proptosis existed, a little lagging of the upper lid could be seen. She had felt a feeling of fulness in the thyroid region, but no enlargement could be detected. She attended for three months, with benefit. A few weeks ago she returned, saying the palpitation and trembling were bad. The hands, as before, tremble when extended. The eyes are now slightly prominent, and exhibit distinctly von Graefe's sign, and the uncomfortable fulness without palpable thyroid enlargement still exists. She has hot flushes and painful cramps in the feet and legs, which sometimes give way unexpectedly. She has irregular menstruation, disturbed sleep, and extreme nervousness.

In the next five cases there has never been any exophthalmos, and in all the thyroid enlargement is slight. The first of this series is not here. I wrote for her to attend the lecture, but have been informed by her sister that she is having fits, and is so excitable that a knock at the door is sufficient to send her off.

CASE 4. *Trembling, palpitation, flushing, perspirations, irritability, and menorrhagia; no enlargement of thyroid until six months under observation.*—Mrs. F——, aged twenty-nine, came on May 9th, 1889, complaining of trembling, palpitation, loss of flesh, flushings, and menorrhagia. The cardiac action was rapid, but there were then no typical tremors, no enlargement of thyroid, no exophthalmos, and no abnormal physical signs in the chest. She had rheumatic fever at the age of eleven. She attended two months, and improved under belladonna and tonics. In October she returned, complaining of the same symptoms as before, and also of a fulness in the thyroid region, which made her collar feel tight and uncomfortable. Examination showed the thyroid to be slightly enlarged. There were now most distinct tremors when the hands were extended. She was low-spirited and irritable.

CASE 5. *Palpitation, trembling, flushing, perspirations, emaciation, &c.; slight thyroid enlargement.*—Emily B——, aged twenty-seven, single, came to the hospital on Nov. 4th, 1889, complaining of cough and pains in the shoulders and chest. She had suffered from palpitation since childhood, and from attacks of trembling, faintings, flushings, perspirations, and disturbed sleep for twelve months. Her hands shook so that she could hardly hold anything, and the legs also trembled and were inclined to give way. These trembling attacks came on at no particular time. At times she felt as if she had no strength to speak or move. She had lost flesh and had occasional diarrhœa. On examination there was found slight thyroid enlargement and very rapid cardiac action. She had felt some fulness in the neck, causing uncomfortable tightness of her collar. There were no characteristic tremors of the hands when I examined her. The only illnesses from which she had suffered were bad sore-throats.

CASE 6. *Trembling, palpitation, flushing, heat, emaciation; enlargement of thyroid; symptoms six years' duration, dating from fright; sister with Graves' disease.*—Annie S——, aged twenty, first came to the Brompton Hospital on Nov. 18th, 1889, complaining of shortness of breath. She said the least thing made her tremble, and when flurried, which was very frequently, her heart beat very fast. On examination I found a moderate degree of enlargement of the thyroid, which she said was very variable, her neck appearing to her much fuller sometimes than others. Her neck measurement was 14½ in. Sometimes she had a feeling there as if she would choke. Beyond rapid cardiac action there were no abnormal signs in the chest and there was no exophthalmos. The trembling was very troublesome to her. Her legs trembled as well as her arms, and were apt to give way. Cramps had been very bad years ago, but were not so now. She said she felt very hot at night, and was subject to flushing heats, but not to sweating. The legs swelled towards evening. Her hair was thin and had come out very much. Her teeth also were decayed. She had had slight epistaxis several times, and she complained of a stopped-up feeling of the nose, sometimes lasting three months at a time. She was formerly troubled with vomiting, but not with diarrhœa. She had lost flesh very much, 21 lb. in the last eighteen months. The catamenia were irregular. Her temper was irritable. She frequently woke up with a start at night. All her symptoms dated from a fright at the age of fourteen. Her father died suddenly, and she was the first to discover him, which gave her a very great shock. She frequently suffered from quinsy. One sister had had rheumatism. Another whom I have seen had Graves' disease in a slight and incomplete form, and attended Dr. Green as an out-patient last year.

CASE 7. *Palpitation, trembling, anæmia, and emaciation; slight thyroid enlargement; fright at onset.*—Sarah J——, aged twenty-three, came on Nov. 18th, 1889, complaining of shortness of breath. She trembled very much at times, and had palpitation badly. She had lost flesh considerably, and her hair had been coming out in handfuls. She suffered from sweating, from a feeling of heat at night, and from cramps in the legs. She was anæmic, and the cardiac action was rapid. There was a fulness in the thyroid region, which seemed to have been greater twelve months previously, her neck then measuring 14 in. in circumference as against 13 in. now. There was no exophthalmos and no abnormal signs in the chest. The catamenia were regular, but insufficient. She suffered from irritability. Her present trouble she dated from the time she was thrown out of a trap two years before.

CASE 8. *Palpitation, trembling, enlarged thyroid, &c.; sister*

with Graves' disease.—Mrs. S——, aged thirty-nine, came on Nov. 18th, 1889, complaining of palpitation for seven or eight years, which had been worse during the previous twelve months, during which time trembling also had been "dreadful." The thyroid was moderately enlarged, especially the right lobe. The tremors were typical, but there was no exophthalmos, and the cardiac action was between 80 and 90. She was intolerant of heat, and felt specially hot at night, when she frequently woke up in a fright. A sister, who suffered from palpitation and goitre, died suddenly when supposed to be in her usual health.

The next case is another in which exophthalmos was absent, and it is interesting on account of the absence also at first of palpitation.

CASE 9. *Trembling, with enlargement of thyroid; no palpitation until six months after first observation.*—Ellen C——, aged twenty, housemaid, came on May 23rd, 1889, complaining that her throat was painful, and was swollen both inside and outside. The thyroid was enlarged as usual, more perceptibly so on the right side, and was said to be larger sometimes than others. Trembling was frequent, and there were marked tremors in the right hand when held out, but palpitation was never experienced. She has continued to attend until the present time, and has been treated with belladonna. The thyroid is still enlarged, and of late there has been palpitation. She has trembling attacks every day at some time or another, and hot flushes, but no perspirations. There is no exophthalmos, and no irregularity of bowels or catamenia. I may add that she had enlarged tonsils, which were removed in January.

Cases 10, 11, and 12 are examples of the form without enlargement of the thyroid. In the first exophthalmos has existed, but has now disappeared; in the other two it is still present.

CASE 10. *Palpitation, trembling, flushings, and perspirations; formerly exophthalmos; symptoms date from severe burn.*—Frances K——, aged twenty-one, attended on May 13th, 1889, for shortness of breath, palpitation, extreme nervousness, and trembling. Her hands were clammy and moist, and trembled distinctly when held out. She had flushings of heat, and complained of a "dreadful" feeling of heat and painful cramps at night. Her legs frequently gave way under her, and became slightly œdematous towards evening. Appetite good, but bowels always relaxed. Catamenia regular. No marked anæmia. Heart action rapid, first sound accentuated, but no murmur. The thyroid could be felt, but did not appear enlarged; very often had a feeling of fulness there. All these symptoms the patient dated from a severe burn two years previously. She has had epistaxis both before and since the burn. I was observing that there was no prominence of the eyes, when the patient interrupted me to say that when she was ill with the burn it was generally remarked that her eyes were starting out of her head, and her doctor frequently spoke about them. This prominence gradually subsided, but even now when she is frightened she says it reappears. I treated her with iron and tonics, but I had to give up the iron on account of diarrhœa coming on. She attended two months, with benefit on the whole. She returned lately, and I am now treating her with iron and belladonna.

CASE 11.—*Palpitation, trembling, cramps, flushing, giving way of legs, and emaciation; eyes lustrous and prominent; history of fright.*—Emily C——, aged thirty-seven, single, came on May 9th, 1889, complaining of palpitation and trembling. She had suffered from palpitation for five or six years, and from trembling for many years, but the latter had been very much worse lately, so that now she could not hold a thing steady. She generally had two or three attacks of trembling a day, affecting the whole of the body and accompanied by palpitation. The least thing, she said, set her off—going into chapel, for instance, invariably bringing on an attack. She was subject to flushing very much, her face becoming scarlet, and her cheeks burning without any apparent cause. The hands were always cold and clammy, the legs were very apt to give way under her, and the feet were attacked with cramps. She had lost flesh very much. Her eyes were prominent, but there was no retraction of the upper lid and no von Graefe's sign. There was no enlargement of the thyroid. The cardiac action was rapid. There were fine tremors in the hands when held out. There was a history of fright seven years previously, a drunken man knocking at the door one night and falling in when it was opened to him. There was no history of rheumatism. The patient's mother was said to be very nervous. She has continued attending up to the present time, taking till recently cod-liver oil and bismuth. Her present condition is no different from that when she first attended. She has lately been having belladonna, and feels better while taking it.

CASE 12. *Trembling, cramps, giving way of legs, palpitation, emaciation, falling out of hair, sweats, flushings, and depression of spirits; exophthalmos, but no enlargement of thyroid.*—Mrs. G.——, aged thirty-two, first attended the Royal Free Hospital in October, 1889, on account of palpitation. Two years before this she had a good deal of worry and trouble which distressed her very much. She then began to suffer from palpitation and breathlessness. Her eyes, always rather prominent, became more so. She felt some fulness at times in the situation of the thyroid. Six months before being seen she noticed that her right hand and arm were constantly trembling, and later the left became similarly affected. Sometimes trembling occurred from head to foot. She had been losing flesh and getting weaker for two years. She had felt low-spirited and lachrymose. The only particulars of interest in her history are that she had rheumatism slightly at the age of seventeen, and that there is a strong family history of phthisis. Her condition was as follows:—Slight exophthalmos, with slight von Graefe's sign. No goitre. Nothing amiss with the heart. Pulse from 88 to 102. Typical tremors in right hand when extended. She flushed easily if unexpectedly spoken to or looked at, and had a constant feeling of heat in the top of the head. She perspired very much, especially on the chest and head, the sweat falling off her in large drops. One leg sometimes gave way, and she had to take hold of some support. She suffered very much from cramps, especially in the left leg. Her hair, formerly very thick, was thin, and was still coming out very much.

Cases 13, 14, and 15 are examples of the most incomplete type, where neither exophthalmos nor enlargement of the thyroid has developed.

CASE 13. *Palpitation, tremors, flushing, giving way of legs, and cramps; symptoms dating from severe fright.*—Mrs. H——, age forty, first attended on April 29th, 1889, for attacks of fainting and shortness of breath. She had very marked tremors in the hands, and her pulse rate was 136. She had suffered from palpitation for four years. Attacks of trembling, she said, were a source of great trouble to her. She had also "dreadful cramps" in the limbs. There was no exophthalmos and no goitre. She was subject to very severe flushings and hot burning heats, especially about the face. Her hair had come out very much. At times her legs would give way under her, and she had the sensation as if all the strength had gone out of them. She had had several attacks of rheumatic fever—at the ages of twelve, twenty-two, and thirty-seven. The cardiac impulse was external to the nipple, but there was no murmur. At the present time the tremors are still very marked, and the palpitation and trembling troublesome. She suffers from depression of spirits and cries all day long. The catamenia, formerly irregular, are now normal. All her symptoms she dates from a very severe fright she received four or five years ago, when burglars broke into the house in which she was living. Before that she never at any time suffered from trembling or palpitation.

CASE 14. *Palpitation, trembling, cramps, giving way of legs, œdema of eyelids, and pigmentation of face.*—Caroline W——, aged sixty, first attended under me at the Royal Free Hospital on April 29th, 1889. She came complaining of palpitation and trembling, from which she had suffered for several years, particularly since the death of her son three years previously. She had attacks of general trembling of the head and limbs so bad that she was unable to thread a needle, and writing was almost impossible. Her legs trembled when walking, and she was inclined to stagger when she first started. She also had painful cramps in the hands and giving way of the legs. The cardiac action was rapid (108) and occasionally intermittent. The impulse was most apparent in the fifth space an inch and a half outside the nipple. No murmur. With the exception of a few rhonchi, there were no signs of disease of the lungs. There was no prominence of the eyes and no enlargement of the thyroid. No albumen in the urine. The patient said she had suffered from severe headache since childhood, but otherwise she had been quite healthy. The only interesting points in the family history were that a sister had died in a lunatic asylum, and that her mother had suffered from heart disease. The patient attended for a

few months, and was treated with tonics and belladonna, and she improved to a certain extent. She returned again in November, and I made the following further notes about her condition:—Complexion muddy, and skin of face and neck rather greasy and brown, being specially pigmented about the eyes. Some œdema of both lower eyelids. Palpitation and trembling still very troublesome. Cardiac action 96. Hands tremble when held out; tremors coarse and irregular. No perspirations. No exophthalmos or enlargement of the thyroid.

CASE 15. *Palpitation, trembling, cramps, flushings, and sweats*.—Ruth L——, aged thirty, single, cook, came on Sept. 30th, 1889, suffering from palpitation, attacks of trembling, and pain at the chest. There were well-marked tremors of the hands when extended. She was subject to cramps in the legs. The cardiac action was rapid. The pulse was taken frequently, and varied between 92 and 120. There was no exophthalmos, and no thyroid enlargement. The hair was thin, and was coming out very much. She was subject to flushing, heats, and sweating. She said she had never been well since she was ten years old, but her present trouble had existed for about twelve months. The catamenia were irregular. She was irritable. Her legs swelled towards evening. Eight years ago she had been very much frightened by a strange man running after her.

"THE LIVING EARTH."

ABSTRACT OF ADDRESS TO SECTION I. OF THE SANITARY CONGRESS HELD AT BRIGHTON.

BY GEORGE VIVIAN POORE, M.D., F.R.C.P.,
PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL; PROFESSOR OF CLINICAL MEDICINE AND MEDICAL JURISPRUDENCE, UNIVERSITY COLLEGE, LONDON.

SANITATION in large cities is, at the best, a makeshift, and no high level of health is attainable in a place where the chief object of hygienists seems to be to enable persons to live as densely packed as possible. This prelude is necessary, because the remarks which I am about to make are addressed mainly to persons who live in the country, and who enjoy the luxury of elbow-room, and I trust that what I am about to say will make them hesitate before they hastily copy the sanitary methods of the town, and heedlessly begin to foster overcrowding, the bane of all sanitary and social virtue.

It has long been recognised by agriculturists that the upper stratum of the soil differs from that immediately below it in fertility; and in treatises on gardening (notably in that admirable work written by William Cobbett nearly seventy years since) the warning is invariably given to be careful, in trenching, not to bury the top spit of soil beneath the lower spit, because the top spit is by far the most fertile. The fertility in this case was supposed to be due to prolonged exposure to air, and the lower stratum of soil, if brought to the surface, would only become fertile after a considerable interval. It is interesting to observe that, although these early writers were unacquainted with the whole truth, they had grasped the most important fact, and their practice was sound. This is often the case, and I feel sure that we act rashly when we hastily abandon the custom of centuries because some new fact dazzles us and distorts our vision. The black vegetable mould which lies upon the surface of the earth is largely composed of organic matter, which is not to be wondered at, seeing that every organised thing, whether animal or vegetable, which inhabits this globe falls when dead upon the earth, and becomes incorporated with it. This black vegetable mould is largely composed of excrement, for not only is the excrement of the larger animals being constantly added to it, but this and the varied organic débris which compose it pass repeatedly, probably, through the bodies of animals which inhabit the earth, and especially of earthworms. Darwin, in his book on "Vegetable Mould and Earthworms," has forcibly drawn attention to the enormous amount of work which worms perform in the aggregate: how they disintegrate the soil; how they riddle it with burrows, which admit air to the deeper recesses of the soil; how their castings, which are incessantly being thrown off, tend to level inequalities, and gradually to bury stones or whatever dead inorganic matter is incapable of solution, digestion, or disintegration. Earthworms are found almost everywhere, and they are probably the most important of the animals which live in the soil, but I need scarcely say that there are many others, and everyone who has a garden must recognise the fact that gardening is only carried out at an enormous sacrifice to animal life, for with every thrust of the spade into rich garden mould a deathblow is dealt to many of its inhabitants. The disintegration and aeration of the soil, which is effected by the quiet tillage of the earth-dwellers, is of the greatest importance to the agriculturist, for it is hardly conceivable that the delicate rootlets of plants could grow and extend unless the soil had been softened and pounded by the digestive fluids and the gizzards of the earthworms and their neighbours. Although the amount of *animal* life in the earth is considerable, it is nothing compared with the richness of the soil in the lower forms of *vegetable* life. The dead and excremental matter becomes the food of saprophytic fungi, which abound in the soil to a very great extent. This must be the case, for we know that saprophytes and their allies abound everywhere, and, as the surface of the earth is the common reservoir of all forms of life, it follows that these low vegetable microbes must be more abundant in the earth than elsewhere, and more abundant at the surface than deeper down.

In Watson Cheyne's editions of Flügge's work on Micro-organisms[1] this is clearly stated: "Enormous numbers of bacteria have always been found in the soil by the most various observers. Infusions made from manured field and garden earth, even though diluted 100 times, still contain thousands of bacteria in every drop, and the ordinary soil of streets and courts also shows the presence of large numbers. Bacilli are present in much the largest numbers; but in the most superficial layers and in moist ground there are also numerous forms of micrococci." These micro-organisms of the soil are very active in producing changes in organic matter added to the soil. These changes are usually in the direction of oxidation; occasionally the change is one of reduction. One thing is certain, that if the soil be sterilised by heat or other means, it is no longer capable of producing any chemical change in organic matter. This seems to me to be a fact of prime importance to the sanitarian. The oxidation and nitrification of organic matter in the soil is a biological question, pure and simple. It is an effect produced by the *living earth*; a process analogous to fermentation, which Cobbett seems to have appreciated. Whether the nitrifying process which takes place in the soil is due to one or to many varieties of microbe is doubtful, but the latter supposition is probably correct, and experiments seem rather to point to the conclusion that, given favourable conditions—the free admission of air to a soil which is not unduly moistened—nitrification will go on. It has been conclusively shown by Flügge, Koch, and others that the microbes are most abundant in the superficial layers of the soil, and that they tend to disappear in the deeper layers. They are practically absent in the deeper layers, unless the earth has been deeply stirred or trenched, or unless sewer or cesspool has conducted filth to the deeper layers without touching the superficial ones. "Numerous filtration experiments, on a large and small scale, have shown most distinctly that a layer of earth, half to one metre in thickness, is an excellent filter for bacteria, and hence the purification of fluids from bacteria must be still more complete in cultivated, and especially in clay soil, and where the fluid moves with extreme slowness. Further, it has been repeatedly shown that wells which are well protected against contamination with bacteria from the surface and from the sides of the well furnish a water almost entirely free from bacteria; that, further, wells of water containing bacteria become the purer the more water is pumped out, and the more ground water comes in from the deeper layers of the soil." The vegetable living mould on the surface of the earth is in, short, a filter of the most perfect kind. It is very rich in saprophytic bacteria, whereas the subsoil at a depth varying from three to six feet is barren of bacteria, as well as of other kinds of life. The subsoil is mineral, inorganic, and dead; the mould upon the surface is organic, and teems with life. Anything which is thrown upon the surface of the ground soon disappears. This is especially

[1] New Sydenham Society, 1890.

the case with water. The absorbing power of soil for water varies according to its mineral constitution. Loose sand and chalk absorb water very readily, and clay less readily, but the absorbing power of vegetable mould, or "humus," as it has been called, is infinitely greater. Humus is said to be able to absorb from 40 to 60 per cent. of water, and to hold it very tenaciously. This is from two to three times as much as the most porous dead mineral soil is capable of absorbing. The tenacity with which mould retains water is due to the fact that the water is absorbed into the interior of millions of vegetable cells, and is not merely held by capillary attraction in the interstices between small mineral particles. It is the swelling of individual cells which forms so effectual a barrier to the passage of bacteria. Not only water, but everything else, when thrown upon the soil, disappears sooner or later. Such things as pieces of wood or leather—about the toughest of organic material—become softened and permeated by fungoid growth, and finally crumble away. In some parts of the country rags of all kinds are largely used for manure. Through the autumn and winter these may be seen lying on the surface, but when in spring the tilling of the land goes forward and the fermentation of the soil commences the coarsest of these rags disappear. If wood, leather, and rags disappear, leaves and animal excrement disappear, as we all know, far more readily. The disintegration is forwarded by birds, insects, worms, and their allies, and what was the excrement of a large animal becomes, as it were, the excrement of many small ones, until finally, by the action of saprophytic fungi, these organic matters become fertile "humus," which is the only *permanent* source of wealth in any country, the source whence we derive all the materials for our food and clothing.

The question whether among the bacteria which are found in the soil some may not be hurtful to mankind is of great interest and importance. If disease-causing organisms find their way into the soil, may they not multiply or at least continue to live, and then prove a danger to health? There can be no doubt that pathogenic organisms do exist in the soil, but their power for harm would seem to be practically very small indeed; and to regard the soil as dangerous because some pathogenic organisms may lurk in it would be about as rational as it would be to condemn vegetable food because of the occasional dangers of hemlock, aconite, or the deadly nightshade. It seems to be a fact that the great doctrine of "the survival of the fittest" holds good for microbes in the soil, as for all other organised things everywhere; and that organisms which flourish in the human body languish and cease to multiply in the soil, where the conditions are unsuited for their multiplication or even for their survival. They get overgrown by saprophytic microbes, and even if they do not die, the risk of their finding their way into the ground water is practically *nil*, for we have seen that humus is the best of filters. That the under strata of the soil are a very inefficient barrier against filth contamination has been demonstrated in all our large towns, and especially in London. In that city the lower rooms of the houses are almost universally below the level of the street, and the house drains leave the house at the lowest point to reach the sewer at a lower level still. In London, a city renowned for its innumerable wells, we have had to close every one of them, and as the excessive dirtiness of the air makes rain-water not available for domestic purposes, we have become absolutely dependent upon the water companies, and it is only quite recently that the public has become alive to the fact that the causes which poisoned the surface wells are equally poisoning the Thames and the Lea, and the other sources of London water. No thinking being can feel easy about the London water-supply, and it is to be hoped that some day the public mind will be roused to an appreciation of the fact that if we want pure water we must make some serious attempt not to foul our wells and streams. I am convinced that in our sanitary arrangements we have not sufficiently distinguished between the living mould of the surface and the dead earth of the subsoil. The living mould is our only efficient scavenger, which thrives and grows fat upon every kind of organic refuse; our only efficient filter, a filter which swells and offers an impassable barrier to infective particles, a filter which affords a sure protection to our surface wells. When we perforate the living humus with a pipe and take our dirty water to the subsoil, we, as it were, prick a hole in our filter, and every chemist knows what that means. In order to keep the soil healthy, to keep up its appetite for dirt and its power of digestion, the only thing necessary is tillage. Well-cultivated soil, which is compelled to produce good crops, has never yet been convicted of causing any danger to health. Sanitation is purely an agricultural question, and in the country, where every cottage has, or should have, its patch of garden, there ought to be no difficulty in the daily removal of refuse from the house, and in applying it to agricultural purposes, without any risk of contaminating the water-supply. Given the patch of garden, the only thing necessary to bring about this, the only complete form of sanitation, is the will to do it—the will, that is, to do a profit to one's self without the possibility of damaging one's neighbour. This, unfortunately, is rarely forthcoming, in spite of the Christian religion and the Education Act, and we go on, even in country places, polluting our streams and wells, with our minds agitated, as well they may be, as to when our water will become too poisonous to drink, and where we shall turn for a pure supply in the future. Sanitation is a purely agricultural and biological question; it is not an engineering question, and it is not a chemical question; and the more of engineering and chemistry we apply to sanitation, the more difficult is the purifying agriculture. This at least has been the practical result in this country.

The only engineering implements which the cottager with a bit of garden requires for his sanitation are a watering-pot and a spade, and if his garden be an allotment away from the cottage, a wheelbarrow may become necessary. The cottager, to whom the produce of his bit of land is a matter of consequence, will endeavour to fertilise as much land as possible with the organic refuse at his disposal; and as long as this endeavour is made there need be no fear of failure, either from the agricultural or sanitary point of view. When, however, an engineer, by means of water under pressure, has collected the organic refuse of a province at one spot, has diluted it a thousandfold, and endeavours to submit it to a mock purification by means of the least amount of land possible, failure is inevitable, both in the agricultural and sanitary sense. It was in 1848 that the advice to "drain" was tendered with a light heart by the pioneers of modern sanitation, who thought it would be an easy thing to purify the sewage and make a profit from it. The Thames, the Liffey, the Clyde, the Mersey, and the Irwell are a standing testimony to the failure of these great engineering schemes, and I would remind you that the last engineering scheme put forward with regard to the sewage of London—viz., to convey it all to the Essex coast and cast it into the sea—is not only a most lame and impotent conclusion, quite unanticipated by the pioneers of '48, but it is an experiment which, like our previous experiments, may be productive of unforeseen results. The panacea for all sanitary ills has been and still is "drainage," and the only scavenger that is in favour is water, notwithstanding the fact that sanitation by water has for its main characteristic "incompleteness." The work is begun and never finished. Our houses are flushed, but we pay for it by fouling every natural source of pure water, whether river or surface well. If there come an outbreak of typhoid, we, as often as not, find the "drains" are to blame; but, as a matter of fact, we prescribe "more drains" as the remedy. I have asked my friend and former pupil, Mr. F. W. Wells, M.B., to go through the official reports which have emanated from Whitehall since 1856, and make an abstract of the chief outbreaks of typhoid fever in this country which have been reported by the medical officers of the Privy Council and the Local Government Board. This Mr. Wells has done in a most painstaking and methodical manner, and the tables which he has constructed form an appendix to this paper which is well worthy of perusal. If you will scan this appendix, you will find that there is one factor common to all these outbreaks—viz., the mixing of excremental matters with water. This mixture generally leaks to the well or rivulet, or waterpipe which supplies the drinking water (which water has not unfrequently been sold under the name of milk), and the result is an outbreak of typhoid. Or the mixture putrefies in a cesspool or sewer, and the gases finding an entrance to our houses cause an outbreak of typhoid. There is no doubt whatever that whenever excrement is mixed with water we are in danger of typhoid. Typhoid was not recognised in this country until the watercloset became common. We doubtless manufactured typhoid in a retail fashion in old days, but with the

invention of the watercloset we unconsciously embarked in a wholesale business. We soon recognised that the watercloset poisoned all sources of water. We have had to go far afield for drinking water, and the result has been that as we left off consuming the springs which we have wilfully poisoned the amount of typhoid has somewhat abated. When the more remote sources of water get poisoned in their turn—as with our increasing population and our methods of sanitation they inevitably must—the present comparative abatement must, one would fear, cease.

It is comparatively recently that we have learnt to recognise the dangers which result from the putrefaction of a mixture of excrement and water in a sewer or cesspool. The ingenuity of sanitary engineers has been exercised to save us from these dangers, and they have given us what they are pleased to call self-cleansing sewers, innumerable forms of trap, endless methods of ventilation, and disconnexion on scientific lines, until the medical officer of health is expected to have at his fingers' ends all the knowledge of a patent agent and a plumber's foreman. If apparatus never wore out, if ventilators never got stopped up, if traps never got unsealed by leakage, evaporation, or other cause, one might feel secure against the enemy which is ever at our gates, provided the study of bacteriology did not lead us to recognise that a few feet of filthy pipe may be as dangerous as a mile, and that a trap may possibly serve, especially in hot weather and when the family is away, as a most efficient cultivating chamber. It is commonly urged by those who defend our present methods of sanitation that, as we must of necessity provide some channel for the escape of slops from our houses, it is false economy not to make these channels carry everything; or, in other words, that, as sewers are a necessity, there is no harm in making them a bigger nuisance than they necessarily must be. I confess I am unable to follow this argument, and I would submit some reasons why every effort should be made to keep excremental matters out of the sewers. 1. Excrement is the only ingredient of sewage against which dangerous infective properties have been proved again and again. It is the ingredient which, when mixed with water, finds its way to our drinking water and causes typhoid and cholera. Sewage without excremental matters is doubtless offensive, and is probably unwholesome in many ways; but it stands in the position of a "suspect," rather than that of a habitual criminal against whom no end of previous convictions have been proved. 2. If excremental matters were stopped out of our house drains, we could in country places often have recourse to the old practice of allowing our household slops to run in open gutters, concerning the ventilation of which there could be no doubt, and the gutters might be subjected to the wholesome discipline of a broom and the purifying influences of sunlight and drying winds. 3. If excremental matters be stopped out of the house drains, the total volume of sewage to be dealt with would be diminished by at least one-fifth, and this surely is a great gain. We should deprive the sewage of just those ingredients which are most troublesome to the sewage farmer by clogging the pores of the ground, and we should leave the sewage very "thin" and admirably suited for downward filtration. It seems to be an acknowledged fact that, for the application of sewage to the land, the more watery it is and the more completely solid matters are strained out of it, the simpler and more satisfactory the processes become. 4. Another class of objections which has been made to the exclusion of solid excrement from house drains has reference to the so-called "manurial value" of sewage and its constituents. It is said that excreta without the total urine are of low manurial value, and that the stopping of excreta out of the sewers lowers the manurial value of the sewage. "Manurial value" is a term used by chemists to express the amount of nitrogen that may be present. Now I do not doubt the ability of chemists to make a quantitative estimation of nitrogen, nor their power of informing farmers of the extent to which they may or may not have been cheated when they purchase artificial manures. I would humbly suggest, however, that the real practical manurial value depends not only upon the amount of plant-food present, but also upon whether the plant food is present in a form in which it can be digested and exhaustively utilised by the plant. For the latter information, which is of the highest importance, I would sooner apply to a practicl farmer or gardener than to a chemist. A chemist, for instance, who had regard to his analyses and nothing else, might tell us that nut-shells had a certain dietetic value; but ordinary men and monkeys know better than that. He might tell us that gin was richer in certain dietetic ingredients than ginger beer, but we know that ginger beer is the better article of diet. Again, guano has a far higher manurial value than "rich garden mould," such as is got by mixing earth with organic refuse; but if we do not dilute our guano to the same level, so to say, as our rich garden mould, we may kill our plants. To declare that rich garden mould is of low manurial value is absurd, because we know that in it plants of all kinds reach the highest development which is attainable. Farmers and market gardeners will tell you that artificial manures have "got no bottom in them," that their use is, so to say, a speculation; and if climatic conditions are unfavourable when the artificials are applied, the money spent on them is lost for ever. With organic refuse, however, the case is entirely different, and the effect of the application of organic matter, especially of human origin, to the soil, is plainly discernible for three or four years. Solid organic matter cannot be washed away; it nitrifies slowly, and doles out the nitrates to the roots of the plants in proportion as they are needed.

I wish to say emphatically that the manurial value of human excrement is enormous, and that it produces all kinds of fruits, flowers, and vegetables in the highest perfection. I speak from a practical experience of nine years, and my belief is that soil cannot be made more fertile than by mixing it with solid excremental matter. It is quite true, no doubt, that the manurial value of urine is very great, but being fluid it is not so easily retained at the spot where the agriculturist wants it; and we know that when fresh and undiluted it is very dangerous to herbage. The fact is that plants absorb their nutriment from very dilute solutions; and it has been found that a fluid containing about 2 per cent. of solids is the *optimum* for plant culture. Ordinary urine, therefore, which contains 4 per cent. is twenty times too strong; but if it be applied to the soil in its state of *optimum* dilution, much of the liquid will necessarily soak out of the reach of the roots. Manurial value is a practical matter rather than a chemical problem, and I have no doubt whatever that those who assert the manurial value of earth-closet manure to be low are making a very serious practical mistake; and I have no doubt that arguments based on the theoretical manurial value of sewage as a whole, or of its several ingredients, are worthless in helping us to decide whether it be advisable or otherwise to keep solid matters out of the drains. What use is there in discussing the "manurial value" of sewage in the face of the deliberate declaration of that eminent agriculturist, Mr. Clare Sewell Read, made a few months since in the *Journal of the Royal Agricultural Society?* "Sewage," says Mr. Read, "has come to be regarded by all sensible people simply as a nuisance to be got rid of." And he goes on to state that, owing to the unmanageable quantities of water which have to be dealt with, sewage is ruinous to all grain crops and all other farm crops except rye grass. The composition of sewage as it flows from towns is so doubtful, and must be so variable, that no sensible man would let it run over his farm. Chemicals and antiseptics are very abundant at the present day, and they are very largely used to lessen the dangers which are inherent in our present system of sanitation. Antiseptics, however, which stop the growth of putrefactive microbes, also check the growth of nitrifying organisms, and are deadly poison to plants. All town sewage is liable to contain dangerous chemicals, which must render the "manurial value" a very minus quantity, the presence of nitrogen notwithstanding. As it is idle to discuss the theoretical manurial value of a practical nuisance, which no sane farmer would take as a gift, it is imperative for us to discover means, if possible, by which those ingredients of sewage which have great enriching power for the soil may be saved for the benefit of the cultivator and consumer.

From every point of view—scientific, sanitary, moral, economic—I feel strongly that dwellers in the country should take warning by the towns. They should revert to the cleanly and decent habits of our forefathers, and keep the sanitary offices away from the main structure of the house, and not, as is the filthy custom of the present day, bring them almost into the bedrooms. They should keep solid matters out of the house drains, and see that they are decently buried in the living earth every day, and they should replace the drains by gutters and filter all the house-

hold slops by applying them to the *top* of a different piece of cultivated ground every day. Whether an ordinary watering-pot or a tank upon wheels drawn by a horse be necessary for accomplishing this latter object will depend upon the size of the establishment; but only those who have systematically pursued this plan, as I have done, can know the vigour which is imparted to hedge-rows, shrubberies, fruit trees, or forest trees, by a tolerably frequent dose of household slops. There is no difficulty in doing this, provided the will be present—the will, that is, to combine your duty towards your neighbour with an act which is profitable to yourself.

I am addressing myself to dwellers in the country, but I should like to say to town dwellers that complete sanitation is impossible, unless cultivated land be brought into tolerably close relationship with the dwelling. At present our sanitary arrangements are magnificently begun and seldom completed, and while we almost uniformly leave a most dangerous loose end to our sanitary measures, we shut our eyes to it and blow the trumpet of self-satisfaction as if the sanitary millennium had begun. The Allotment Act, as affording an outlet for organic refuse, ought not to be without its effect upon sanitation, and it is to be hoped that the masses will some day wake up to the great importance, from the moral and sanitary standpoint, of providing every dwelling with an adequate outlet. As things go at present, I have very little doubt that the agricultural labourer with his cottage and garden and 12*s.* a week is infinitely better off than the town artisan on 25*s.*, who pays dearly for pigging it in overcrowded rooms, in which a cleanly and decent existence is impossible. I have been reading the last volume of our Transactions, and in it I find a very interesting paper by Dr. Sykes, who quotes Dr. Corfield, who, in his turn, is quoting Sir Henry Acland, to the effect that the disappearance of the great cities of antiquity was due to pestilence rather than war. We must all admit the possibility of such an assumption, and certainly no one can ponder upon the disappearance of Egyptian, Babylonian, Assyrian, Greek, and Roman civilisation without speculating upon the cause, and without applying the lesson to ourselves and asking ourselves how much longer is our British civilisation to continue? Nationalities seem as mortal as the individuals who compose them. If great nations are destroyed by neglect of sanitary laws, and if prolonged national life is indicative of sound sanitary measures, there is at least one race upon the globe which is worthy of profound study by all who concern themselves with public health. This race is the Chinese, who have seen all the great nations of antiquity in and out, who were probably a great people in the days of Moses and before, and whose thrifty myriads are even now successfully contending with the Anglo-Saxon race in America and Australasia. The Chinese, as is well known, have had to contend with national calamities of a most stupendous kind. In our own days we hear of floods and famines which claim their millions of victims, and yet the race continues to increase in such a way and to overflow its natural boundaries to such an extent that it is certain, even without the exact returns of a registrar-general, that the birth-rate must very considerably exceed the death-rate, and must have done so in an average way during the three or four thousand years that the Chinese nation has existed. I think there is no doubt that, unless we mend our ways, the Chinese will see us out, as they have seen the other great nations of the world out, and the reason, I believe, is obvious. The Chinese are the most thrifty nation in the world. In China nothing is wasted, and all organic refuse is ultimately returned to the soil. Agriculture is in China a sacred duty, and the Chinese have got a firm grasp of the elementary principle that if the fertility of the earth is to be maintained we must constantly replenish it.

The question of our duty to the soil is fundamental in sanitary matters. If we starve the soil and turn our fertilising materials into the sea, we may rid ourselves (though this is doubtful) of filth diseases for a time; but it is by no means doubtful that we shall ultimately replace filth diseases by those diseases that are bred of starvation. How soon this will happen no one can say, but that it will happen eventually seems to me as certain as is the axiom, "ex nihilo nihil fit." Do not let us commit the great blunder when dealing with this national question of forgetting that the life of a nation ought to be measured by centuries. Do not let us make a suicidal use of a paltry fifty years' statistics, and because the figures of the last decennium happen to be favourable conclude therefrom that all our sanitary principles are right. The Chinese principle of returning all organic refuse to the soil is, there can be no doubt, absolutely sound. The Chinese details may be filthy and susceptible of improvement. In this country the details of our domestic sanitation are refined, elegant, and ingenious. It is the principle subserved by these details which I believe to be absolutely rotten. The main problem of sanitation is to cleanse the dwelling *day by day*, without fostering starvation. This can only be done by returning all organic refuse to the soil, and the perfecting of the details by which this duty is to be done is the most important work of the modern sanitarian. This question has an immediate personal interest for all who derive their income from the soil. I feel sure that the clergy would do well to enforce by example as well as by precept the old injunction, to "replenish the earth and subdue it." If they do not they must expect to go without their tithes. Improvement in this direction is only to be attained by rousing the public conscience. So soon as the majority of individuals is impressed with the fact that it is wicked to foul our streams and starve the soil, and that our individual responsibility does not end, even though the fouling and starving be done by a "board," so much the better will it be for the public health and national wealth. Parliament has compelled us to hand over our responsibilities to public authorities, with the consequence that the individual has lost his liberty and independence, and is drifting into a condition of sanitary imbecility. Let us not forget that the present state of our rivers is the direct result of Acts of Parliament. Let us not forget that Parliament, which wasted its time and our money in passing that most inoperative of all Acts, the "Rivers' Pollution Act," scavenges its own palace direct into the Thames; as though Imperial Parliament could hand over its responsibilities to a local board! It is hardly credible that such a condition of things could exist outside the libretto of a comic opera. A respect for the purity of water should be enforced in our Board schools and churches; and that powerful party in the State—I mean the temperance party—would do well to devote some of its energies towards ensuring that the beverage which it champions should be in all places a safe one to drink. As it is, one has only to walk about the country to see that our streams and rivulets are universally regarded as receptacles for rubbish and impurities of every kind. This question, I must reiterate, in conclusion, is a national one of the first importance. A nation that fouls its streams and starves its soil is in danger of poisoning and inanition. A nation which imports a great part of its food and a great part of its manure, and systematically and by Act of Parliament throws all its organic refuse into the sea, is obviously living on its capital. Our capital just now is undoubtedly considerable, but we are in a fair way to run through it; and when we have done so, who can forecast the future?

SURGERY OF THE LATERAL VENTRICLES OF THE BRAIN.[1]

BY W. W. KEEN,
PROFESSOR OF SURGERY IN THE JEFFERSON MEDICAL COLLEGE, PHILADELPHIA, PA.

AFTER alluding to the fact that puncture of the brain for the relief of hydrocephalus dates back to 1744, in the case of Dean Swift, Dr. Keen pointed out that the former operations were done through the anterior fontanelle, and not by trephining. In 1881 Wernicke first proposed to trephine and puncture the lateral ventricles. This proposition was enforced by Zenner of Cincinnati in 1886. On Nov. 7th, 1888,[2] Dr. Keen read a paper before the College of Physicians of Philadelphia, in which, in ignorance of these earlier propositions, he proposed to trephine, puncture, and drain the lateral ventricles. He was led to this by a case of exploratory trephining for supposed abscess of the temporo-sphenoidal lobe. The necropsy showed that there was distension of the lateral ventricle in consequence of tubercular menin-

[1] Résumé of a paper read before the Tenth International Medical Congress, Berlin. [2] Medical News, Dec. 1st, 1888.

gitis, and that the drainage-tube had reached to within a quarter of an inch of the ventricle, and had not produced any inflammation. He pointed out the fact that the brain would bear pressure much less well than the other viscera, and hence the need for early trephining. He then reported the following three cases of his own.

CASE 1.—A boy aged four years was threatened with blindness from acute hydrocephalus. This condition was judged to be due probably to tumour of the cerebellum, though on which side was doubtful. Dr. Strawbridge had examined the eyes, and had found that there were choked discs with retinal hæmorrhages and swelling. The swelling of the disc measured 2·30 mm. in each eye, and, in view of the rapidly increasing blindness, Dr. Strawbridge brought the child to Dr. Keen for the performance of an operation. This was done at the Woman's Hospital, Philadelphia, on Jan. 11th, 1889. A puncture was made at a point one inch and a quarter behind the left meatus, and the same distance above Reid's base line. A half-inch button of bone was removed and the brain punctured by a hollow needle (No. 5 French catheter scale), which was inserted in the direction of a point two inches and a half vertically above the opposite meatus. At about an inch and three-quarters the resistance suddenly ceased, and the cerebro-spinal fluid began to escape. Three stout horsehairs, doubled, were then passed into the ventricle. No phenomena occurred during the operation. The highest temperature that followed the operation was 101·2° for a very brief interval, but most of the time it was normal. In two days the swelling of the optic nerves had fallen to 1·57 mm. and 1·63 mm. in the right and left eye respectively, and by the sixth day to 1·09 mm. in both eyes. By the seventh day the swelling of the optic nerve had increased, and the drainage was not very free. The tumour was sought for by probing through the drainage opening into the occipital lobe, almost to the occipital bone. No tumour being found by probing, an opening a quarter of an inch in diameter was gouged in the occipital bone below and to the left of the inion. The cerebellum was explored by a probe to the depth of two inches and a quarter in the direction of the left lobe, and again obliquely across into the right lobe, but no tumour was found. This wound healed by first intention without any fever. On the fourteenth day the horsehairs were removed, and a small rubber drainage-tube was inserted into the ventricle in order to give freer vent to the fluid. This was attended by no pain or discomfort. By the twenty-eighth day the child had become somewhat restless, and the swelling of the discs, which had fallen to 0·83 mm., had again increased to 1·33 mm. in each eye. Accordingly, the right side of the skull was trephined at the corresponding point above and behind the ear, and the occipital lobe was punctured to the tentorium, but no tumour was found. A drainage-tube was then passed into the right ventricle directly, being inserted without the prior puncture by a hollow needle. On the thirty-second day, by a fountain syringe, the bag of which was raised about six inches above the head, the ventricles were irrigated from side to side with warm boric acid solution, four grains to the ounce. While the connexion was being made with the tube, the child was a little restless, but as soon as the warm water began to flow into the brain he became quiet, and said that "it felt good." The fluid escaped from the opposite side slowly. The bag of the syringe was then elevated until the escape became quite free, but never reached a continuous stream. It was estimated that about eight ounces passed into the ventricles, of which about two ounces escaped from the opening on the opposite side and about six ounces were retained. No phenomena whatever were apparent during the process described, saving the comfort shown by the child. On the thirty-fourth day the ventricles were again irrigated from side to side with plain boiled water, which gave less relief than the boric acid solution, but produced no ill effects. A few days later the child was evidently not so well, and died on the forty-fifth day, the first drainage-tube having been in place nearly all that period. At the necropsy the cerebro-spinal fluid was perfectly clear; more so than that which was obtained at the first tapping, which was slightly turbid. The ventricles were greatly distended with fluid. There was found in the left lobe of the cerebellum a sarcoma, which had compressed, as was suspected, the straight sinus and the veins of Galen, and had encroached on the fourth ventricle. The sinuses through which the rubber tubes passed were not surrounded by an inflammatory zone. There was no injury of the opposite wall of the ventricle, and no trace of the punctures made in the cerebrum or cerebellum. The oblique puncture made in the latter had gone through the tumour, which, however, was too soft to be perceived.

CASE 2.—A boy aged three years and a half. Hydrocephalus set in four or five months after birth. His mental condition was extremely poor. On March 5th, 1889, the left ventricle was tapped in a similar manner as Case 1. At a depth of an inch and a quarter the resistance suddenly ceased, and the cerebro-spinal fluid immediately escaped. As in the first case, the fluid was slightly turbid. Drainage by horsehairs, as formerly, was not very effective. The highest temperature immediately after the operation was 100·2°, and there was marked increase in the use of the right arm, which had been paretic. The drainage being insufficient, on the fourth day the ventricle on the opposite side was opened, and a small drainage-tube inserted in both ventricles. These were stopped by disinfected plugs of wood, with a V-shaped slot cut in each, so as to allow of the escape of the fluid at about thirty-five drops a minute. As this seemed to be too free after four hours and a half, other disinfected plugs were inserted with smaller slots. Convulsions set in the next day. As soon as Dr. Keen reached the patient, he found the convulsions constant, so he decided to replace the drained fluid, and, having no time for the preparation of an artificial cerebro-spinal fluid, he used plain boiled water. This was syphoned from a height of about three inches. As soon as the warm solution began to flow into the ventricles the spasms ceased. The flow was then immediately stopped by squeezing the tube, and in a few minutes the convulsions returned. They were immediately arrested again by slight syphonage of warm water. Eight times the convulsions returned, and each time they were arrested by a syphonage of about half an ounce to an ounce of fluid. Dr. Keen estimated that the amount of fluid injected was nearly a pint. No further spasms occurred, but the child gradually failed, and died in the afternoon. The necropsy showed great hydrocephalic distension, but no injury from the operation.

CASE 3.—This was a case of tubercular meningitis with unilateral acute internal hydrocephalus of the left ventricle. The foramen of Munro, as the necropsy showed, was closed. This closure was attended by unilateral distension and produced right hemiplegia. In this respect the case is probably unique. The left ventricle was tapped through the arm centre. The child was almost *in extremis* when it was done, and died about four hours after the operation. At this operation it was equally easy to determine when the ventricle was reached.

Dr. Keen next referred to the case of von Bergmann, in his "Surgical Treatment of Brain Lesions," as the first case ever operated upon, though not published until after his own paper; and a note on his first case. An operation was performed in this case on July 15th, 1887, by the anterior route, and proved fatal on the fifth day. He described the next two cases reported to him by letter by Mr. Mayo Robson of Leeds.

A girl aged ten, without preceding illness, began to have pain in the left ear, and was feverish on Dec. 19th, 1888. In three days a discharge followed, which gradually lessened, but was still present a month later when admitted to the hospital. There had been also rigidity of the neck and twitching of the right angle of the mouth. No vomiting. Slight mental disturbance. On admission (Jan. 19th, 1889) the temperature was 105°; there was pain in the left side of the head; paresis of the right arm and leg, gradually developing into complete hemiplegia and aphasia; and the optic discs were inflamed. An operation was performed on Feb. 7th, 1889, by trephining over the arm centre. The dura was healthy. On exposing the brain, it did not pulsate, and seemed to be compressed. Exploring needles were passed deeply in various directions, with the expectation of reaching pus, but failing to find any the needle was pushed on into the lateral ventricle, and half an ounce of clear fluid drawn off, after which pulsation returned in the brain. The wound was closed as usual, no drainage being employed. The next day there was slight power in the arm, soon after in the leg, and on the third day she could answer simple questions. Within a month the hemiplegia was gone. Six months later she was perfectly well. Even half an ounce of fluid seems to have imperilled life by pressure, and the operation undoubtedly saved her life—a most important and encouraging lesson for the future.

Mr. Robson's second case was one of an infant who was trephined for quickly increasing hydrocephalus following treatment of spina bifida by Morton's injection. The skull was trephined an inch in front of the Rolandic fissure over the second frontal convolution. The dura was opened and an exploring syringe inserted into the ventricle, which was reached an inch from the cerebral surface. By Lister's sinus forceps a rubber drain was inserted along the needle as a guide. The drainage was so free that it wet the dressings and ran on the floor, and the patient seemed much relieved. The drainage soon became less free, and on the third day the child died in convulsions. The post-mortem examination showed that the brain had shrunk so much that the end of the tube was lying between the dura and the brain.

Dr. Keen alluded next to the case of Ayers and Hersman, in which, on Dec. 4th, 1888, puncture was made over the coronal suture an inch and a half to the middle line. The operation was repeated on April 28th, 1889, by Dr. Hersman. The first operation was followed by the escape of from four to eight ounces of cerebro-spinal fluid and evident improvement. At the second operation no fluid was found in the ventricle, and the child was very much improved.

Of the seven cases thus far reported, two have recovered and five died—a mortality of 71 per cent.—which, for a new operation and for so extremely dangerous a condition, is far from discouraging, especially Mr. Robson's first case.

Dr. Keen then entered into the question of the technique of the operations, and pointed out that it was neither difficult nor dangerous, that the rules he had laid down in his former paper[3] had proved to be correct, and that in his judgment the lateral route is the best, except in special instances. From his experience in these three cases, he urges that the puncture be made by a cannula (No. 13 French catheter scale), and that the drainage shall not be done by a tube, but by a sufficient bundle of horsehairs, and that too much haste shall not be used in draining off the fluid, as such haste may perhaps cost the life of the patient, as in Case 2.

Dr. Keen next took up the question of hæmorrhage into the ventricles, and referred to the following case, reported to him personally by Professor Frederic S. Dennis of New York. It is the first case in which a clot has ever been removed from the lateral ventricle.

A man, aged thirty-six years, was struck on the right side of the head by a falling ladder, but was not rendered unconscious by the blow. An hour after admission into the hospital his left arm became paralysed, and later the face and leg also. A diagnosis of cerebral hæmorrhage was made, and six hours after the accident he was operated on. A linear fracture without depression was discovered. Trephining was done over the arm centre. No epidural and no subdural clot was found, nor was any clot found when the brain tissue was incised. Accordingly, an incision was made directly into the ventricle, and when the retractors were slightly separated a blood-clot about the size of a pullet's egg shot out of the ventricles with force enough to land several feet from the patient's head. Gentle irrigation and drainage were employed, with the ordinary care of the wound. The patient never recovered from the paralysis, became delirious, and died comatose in three days. The necropsy confirmed the diagnosis, and also that there had been great laceration of the cerebral substance, to which fact death was due. There was no meningitis, and no suppuration.

Dr. Keen then narrated four cases of abscess bursting into the lateral ventricle, beginning with the historic case of Detmold in 1849, and added three other cases by Pancoast, Morehouse, and Norton. All of the patients died, as might be presumed to be the case from so dangerous an accident.

The next series of cases were those due to rupture of the ventricles by compound fracture. Two cases were referred to—one of Nassa the other by Hewitt—in both of which the lateral ventricles were torn primarily, and there was free discharge of cerebo-spinal fluid. Both of these cases recovered.

Of secondary opening of the ventricles, Dr. Keen gave six cases by Bouchacourt, Berenger de Carpi, Erichsen, Rodenstein, and himself. Strange to say, four of these six cases recovered.

[3] Ibid.

Five cases of rupture of the lateral ventricles, from simple fracture of the skull, were also referred to, one each related by Thompson, Haywood, Erichsen, and two by Lucas. All of these patients were young children, five years of age and under, and all showed secondary soft swelling under the scalp, with the removal of the cerebro-spinal fluid, either by tapping or, as in one case, by rupture. Of the five cases three recovered.

After consideration of the entire subject the following conclusions were reached:—1. Injuries involving the ventricles, the result of compound fracture or of trephining, and involving great disturbance of the cerebral substance, are not necessarily fatal, for ten of the twenty-six cases here reported have recovered. In these few cases compound fractures and extensive injuries, unless primarily fatal, seem to be less dangerous than rupture of the ventricles from simple fracture. They should be treated antiseptically in precisely the same manner as wounds in other parts of the body, by the establishment of asepsis, drainage, and the usual later treatment of similar wounds in other regions. If pus follows, or the cerebro-spinal fluid becomes dammed up, causing symptoms of pressure, incision and free drainage should be resorted to. 2. In cases of simple fracture involving the ventricles, experience would seem to indicate that it would be wise not to attempt any operative procedure unless threatening symptoms supervene. If necessary to interfere, it is recommended that the cyst containing cerebro-spinal fluid be continuously and slowly drained by a small bundle of horsehairs, rather than by freer evacuation. But it is believed that, in the majority of cases, constant pressure and but little active treatment would meet such symptoms as might arise. Possibly slight pressure would be all the treatment that would be necessary. 3. Abscess of the brain bursting into the lateral ventricle has been thus far uniformly fatal, and demands the promptest treatment possible. The suggestion made for instant bilateral trephining and irrigation of the ventricles can at least do no harm, although the possibility of its doing any good is but slight in so fatal a condition. 4. Hydrocephalus, whether acute or chronic, is usually a fatal disease. 5. Surgical procedures for tapping the ventricles for its relief are easy, and certainly do not *per se* involve great danger. 6. Whether they will cure the disease is as yet not determined. In acute effusions, tapping, with or without drainage, as may be thought best, will certainly save some lives otherwise doomed to be lost, and in the chronic form long-continued slow drainage at an early period is at least worthy of trial, with a reasonable hope of success in a few cases. 7. The methods above described for performing the operation, especially by the lateral route, might be resorted to, with a view of determining the value of such surgical procedure. 8. After trephining and tapping of the ventricles irrigation of the ventricular cavities from side to side is not only possible, but does no harm. In abscess involving the ventricle, and possibly in other conditions, it may possibly do good. The fluid used for such irrigation should not contain anything which if retained and absorbed might do harm. An artificial cerebro-spinal fluid or a simple boric acid solution would seem to be the best for such use. 9. Convulsions, due to too rapid withdrawal of the cerebro-spinal fluid, may be checked by re-injection of an artificial cerebro-spinal fluid, or such other innocuous fluid as the circumstances may make available. 10. In either irrigation or injection of the ventricles it is probably desirable that the air should not enter, but such entrance of air does not seem to be productive of mischief. 11. In hæmorrhage into the lateral ventricles, at least of a traumatic origin, instant trephining and evacuation of the clots should be done, and in a few cases will probably be followed by a cure, unless the injury of the cerebral tissue is such as to be incompatible with life.

COMMENDABLE ESPRIT-DE-CORPS. — At a recent meeting of the Horsham Guardians it was decided to reduce the salary of one of the medical officers by 12½ per cent. Mr. Kinneir, the officer in question, refused to accept the reduction, but agreed to continue his duties till his successor was appointed. On the vacancy being advertised in several journals, not a single application was received. A proposition that the post should be again advertised was defeated by 10 votes to 6. A motion will be made to have Mr. Kinneir reappointed.

FIVE CONSECUTIVE CASES OF GUNSHOT WOUNDS OF THE ABDOMINAL VISCERA TREATED BY LAPAROTOMY.

TWO DEATHS AND THREE RECOVERIES; SUGGESTIONS ON THE TECHNIQUE AND AFTER-TREATMENT.[1]

BY AUGUSTUS C. BERNAYS, A.M., M.D., &c.,
PROFESSOR OF ANATOMY, ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS, ETC.

THIS paper was intended to detail the author's experience in this department of surgery, which comprised six cases, one of which required to be eliminated from statistics because a suicidal patient shot herself again seven hours after the operation. He had arrived at the determination to perform an explorative operation on every wound of the abdominal cavity, within a reasonable time after the injury, as long ago as the year 1885. This rule of practice had become a principle from which only insurmountable obstacles could make him deviate. He was of opinion that the following cases would go far to prove the logical correctness of his position.

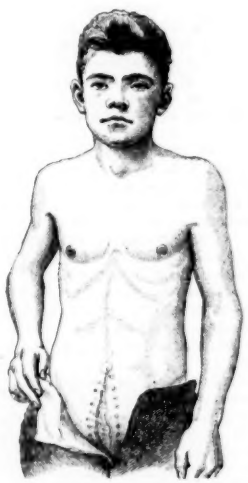
CASE 1.—A. G——, between nine and ten years of age, was shot with a toy pistol, the mouth of which was almost touching her dress when discharged. Three shot, calibre 18 (Turkey shot), entered the skin by a single hole in the skin. The opening was situated three inches below the umbilicus and about three inches and a half to the right of the median line just over the cæcum. Laparotomy was performed by enlarging the wound upwards and downwards. In the fascia of the external oblique two perforations were found side by side, and there were two holes—one oblong, the other round—in the parietal peritoneum. The three shot had evidently separated from one another in their course, and three perforations were found in the beginning of the ascending colon on its anterior aspect about an inch and a half above the ileo-cæcal valve; two of them stopped in some rather hard fæcal matter, and one passed through and perforated the posterior wall, where it lodged between the layers of the meso-colon. This shot must have cut or torn a small artery, and had given rise to the formation of a hæmatoma as large as a small egg.

The three apertures in the anterior wall of the colon bled freely and some fæcal particles had escaped. The wounds in the intestines were closed by ten interrupted Lembert sutures, the finest iron-dyed silk being used. The blood was carefully sponged away and the external wound closed by eight deep and twelve superficial sutures. The patient, after lingering for some time, died of peritonitis of a septic nature, set up, perhaps, by some of the ptomaines which are known to exist in the fæcal contents of the large intestine.

The author was sure that this case might have been saved, and regretted very keenly the necessity of recording it, because it would count against the operation in all statistical tables hereafter. It was his first case of intestinal shot-wound, and the death should be charged to his want of experience in handling injured intestines.

CASE 2 was that of a boy of twelve years, who had been shot by a companion on the evening of Nov. 5th, 1887, with a revolver. The bullet entered his back two inches and a half to the left of the spinous process of the second lumbar vertebræ. The morning after the accident, on arriving at the house with his assistants, it was found that the boy had rested well during the first part of the night, had grown worse towards daybreak, complaining of pain and nausea, but had not vomited. His pulse was 110, and his temperature 102° F.; his abdomen was swollen, though not very tense, but very painful to the touch everywhere below the umbilicus. An incision was made in the linea alba, extending from the umbilicus to the symphysis pubis. On opening the abdomen the omentum and nearly all the small intestines protruded. On examining the cavity of the abdomen about a pint and a half of dark blood was found, which was removed, and the abdomen carefully attended to. The bullet, found between two layers of omentum, was easily removed. Two perforations were found close to one another, and were treated by four or five Lembert stitches. The boy stood the operation well, and soon returned to perfect consciousness. This case, which was exceedingly complicated during the recovery, was the first successful laparotomy for gunshot wound performed in the State of Missouri. (Fig. 1.)

FIG. 1.



CASE 3 was that of a police officer aged thirty-eight, who was shot in the abdomen by a negro whom he was trying to arrest on June 26th, 1888, just before midnight. The weapon was a 41 calibre English bulldog pistol, and the distance from which the shot was fired about 25 ft. The ball entered 2½ in. above the umbilicus and about 2 in. to the left of the median line. An incision in the linea alba was made, reaching from the sternum to 1½ in. below the umbilicus. After opening the abdominal cavity there was a decided smell of intestinal gas, not fæcal in character, but smelling of semi-digested sour food. A large clot of blood was found on the anterior wall of the stomach, and when this was removed an opening was seen in the interior wall of the

FIG. 2.

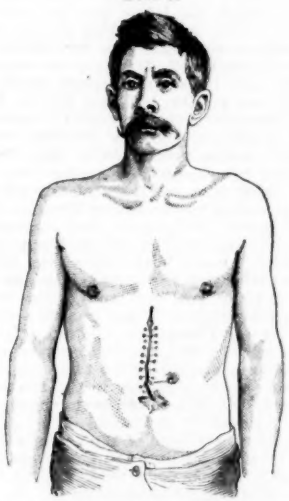
stomach, equidistant from the curvatures. It was closed by six Lembert stitches. The operator expected to find another perforation on the posterior surface of the stomach, but a careful search failed to reveal one. The point of exit was found 2 in. below the pylorus in the duodenum, the ball having passed through the pyloric orifice. This opening

[1] Abstract of a paper read at the Berlin Congress.

was closed by four Lembert sutures. The next perforation was found about 18 in. below the one last closed, and was by far the largest made by a bullet that Dr. Bernays had ever met with in the gut. It was fully 1¼ in. its largest diameter, very irregular in shape, with ragged edges. This large opening was fortunately situated exactly opposite the mesenteric attachment. (Fig. 2.) The operation lasted about one hour and a half. The patient's pulse was feeble and intermittent, his extremities cold, and his condition did not seem favourable. He saw the patient again about four hours after the operation. The attendants said he had fallen into a deep sleep soon after his departure, and had just awoke a few minutes before his return. The condition had entirely changed. There was complete reaction; pulse (strong, though slightly intermittent) 85 per minute; temperature 99°. Little occurred to interrupt the regular process of convalescence, and the patient was allowed to leave his bed about one month after the accident, and has never had as much as an attack of colic since. Nearly a year and a half has passed since the accident, and he has been doing police duty without losing a single day on account of illness since he resumed his position in the force. The Municipal Assembly of the city of St. Louis passed a special ordinance awarding Dr. Bernays the sum of 500 dollars for the above operation.

CASE 4.—On the night of Nov. 16th, 1889, a young man was accidentally shot by the discharge of a 32-calibre revolver which he had carried in his left trousers pocket, the handle towards the feet, barrel pointing upwards. On examination of the patient one hour after the accident we found the point of entrance of the bullet two

FIG. 3.



inches below and about one inch to the left of the umbilicus. Just before the operation the condition of the patient was as follows: pulse weak, 100 per minute; temperature normal; not much shock but great pain in the abdomen. The incision stretched from the point of entrance of the ball obliquely to the umbilicus upwards in the median line to the ensiform process. (Fig. 3.) The first injury detected was a perforation of the omentum, which was not bleeding and required no treatment. Next the stomach was opened, and at the major curvature a large spurting artery was seen, which proved to be the gastro-epiploica dextra. It was completely severed and both ends spurted vigorously. They were brought into view by sponging away the blood and were tied. About half an inch from this wounded artery, and about three inches from the pylorus on the anterior wall of the stomach, the ball had entered this viscus, tearing a small hole, through which a good deal of gas and some contents bubbled out. The hole was closed by four Lembert stitches. On examination of the liver, it was found that the ball had partially torn the round ligament and had entered near the hilum of the liver. In this case the patient acquired a troublesome cough, accompanied by no expectoration whatever, due to a very slight circumscribed irritation of the pleura, originating in the perforation of the diaphragm by the bullet. This ultimately caused a separation of the edges of the incision, extending through all the soft parts down to the peritoneum. The separated edges were not reunited by sutures, because from similar former experiences this had been found to be worse than useless. He adopted a method which consisted of placing a belt about three inches wide around the body and tightening it firmly. No matter how severe the cough might be, there could be no further separation, because a distension of the abdomen was impossible at the point covered by the belt. The narrow tight belt after any laparotomy tended to give the abdominal organs mechanical rest. It prevented the excursions usually present during normal respiration to a great degree, and enforced thoracic while it diminished abdominal and diaphragmatic breathing; it also prevented the rapid spreading of peritoneal inflammation, tending to localise and circumscribe it. In certain cases he would not hesitate to put a plaster-of-Paris cast round the abdomen, if an indication which seemed to make mechanical rest for the abdominal viscera desirable was discovered.

CASE 5.—Louis B——, aged twenty-two, was accidentally shot near Hamburg, Mo., on Dec. 15th, at about 7 P.M., at close range, by a friend in whose hands was a 32-calibre revolver. Immediately after the accident he was seen by Dr. Martin, who correctly diagnosed the case as one of perforating shot wound, with visceral injuries. The doctor ordered his immediate removal to the city, giving him a letter of recommendation to Dr. Bernays. The patient was taken a distance of two miles in a waggon, then put in a boat and rowed down the river to Port Royal, and afterwards brought by rail to St. Louis on the morning of Dec. 16th. He was taken in a waggon to the Baptist Sanatorium, a distance of four miles and a half from the railway depôt. He was seen at this place at 10.45 A.M., about sixteen hours after the accident. From the time the accident occurred the patient was given nothing but water and a few doses of morphine. The ball entered the abdomen two inches above the umbilicus and one inch to the right of the median line. There was great tenderness on pressure all over the epigastric region, but when left alone the patient complained only of pain in the right lumbar region. Laparotomy was determined upon and performed, after elaborate antiseptic preparations, good light, assistance, &c., had been provided. On the anterior aspect of the stomach, two inches from the pylorus, a circular perforation was found on opening the abdomen, and immediately closed by five silk Lembert stitches. The wound of exit was found near the minor curvature on the posterior (more properly lower) wall of the stomach, and was closed by a double row of Lembert stitches. No other perforation of the intestines was found; the ball passed backwards, grazing the head of the pancreas. The entire parietal peritoneum covering the posterior wall of the abdomen, as well as that part of the peritoneum which forms the so-called root of the mesentery, behind which lies the vertebral column and the large vessels, was suffused by extravasated blood. In other words, there was an enormous hæmatoma post-peritoneale, which extended from the promontory up and into the posterior mediastinum. The patient did well for twenty-four hours, but, rapidly growing worse, died at 7.30 P.M. on Dec. 17th. At the necropsy (coroner's post-mortem), besides the facts just related, a perforation of the duodenum at its lower connexion with the head of the pancreas was found, which had been overlooked at the operation. The wounds of the stomach that had been stitched were nicely and firmly closed. After passing between the duodenum and the head of the pancreas the ball glanced off from the body of the second lumbar vertebra, lacerating the right renal vein and some small arterial branches. The right kidney, as well as the vena cava and all the other vessels and nerves along the vertebral column, were completely surrounded by extravasated coagulated blood. The bullet passed backwards into the lumbar muscles. There was general peritonitis; some contents had escaped from the perforation in the duodenum. Had the operator known of the existence of the laceration of the renal vein, he might have ligatured the renal artery, or perhaps have enucleated the entire organ. Which of the two procedures would have been most likely to be successful can only be decided by experiments. So far as he was aware, the renal artery has never been ligatured to stop hæmorrhage from the vein. The danger of gangrene of the organ would be small, he thought, because collateral circulation would be easily established through the capsule. The perforation of the duodenum, which was not seen at

the operation because it was hidden by the head of the pancreas, might have been found by Senn's test, providing that it was not closed by some such thing as part of a cabbage leaf or other tough material that might be passing through the bowel. There was no evidence at the necropsy that septic peritonitis was due to this overlooked perforation. The perforations of the duodenum have proved the most difficult to find and to treat, because of the deep and hidden position of this bowel.

The following case has recently come under Dr. Bernays' notice. The Deputy Marshal, a man about forty years of age, had been shot at very close range with a 38-calibre revolver while attempting to make an arrest. The ball entered the abdomen at a point about midway on a line extending from the umbilicus to the spine of the ilium. The patient was doing exceedingly well; the pulse ranged from 80 to 90; temperature 99 6, never having been above 101; abdomen somewhat tympanitic, but not painful on pressure. He had vomited half a dozen times—a circumstance which one of the attending physicians attributed to the morphine that had been administered. The patient absolutely refused the operation under any circumstances. On examining more carefully and turning the patient over, a peculiarity was noticed in the motions of the left lower extremity. The muscles supplied by the crural nerve were found to be paralysed; while those supplied by branches of the sacral plexus were intact. Taking all the facts into consideration, it seemed quite possible that the ball might have passed into the abdominal cavity, along its anterior wall, very close to the parietal peritoneum, perhaps not even injuring the omentum, a distance of several inches, and then torn or injured the crural nerve just above Poupart's ligament.

In concluding his paper, Dr. Bernays said: "I cannot believe, from the evidence before me, that 30 per cent. of perforating gunshot wounds of the abdomen will recover without laparatomy, more especially if there is visceral injury, and if the missile be of such calibre as was used by the French army in 1870. My own experience of five operations proves to any candid and honest critic that under the expectant plan of non-interference the record would have shown five deaths, while under the plan followed by me this mortality of 100 per cent. was lowered to 40 per cent. Every surgeon will also admit that my cases (excepting the first one) were *bad* cases; and, indeed, cases No. 3 and No. 4, *both* of which recovered, were perhaps as grave and as badly injured as any successful cases that have been recorded. If the publication of these cases and results will serve to encourage my co-workers in the field of abdominal surgery to renewed efforts in cases of gunshot wounds, and if the description of my operations and after-treatment will serve to throw a little more light on this most difficult department of surgery, my object in publishing this paper will have been accomplished."

St. Louis, Mo.

RECURRING OCULAR PALSY.

BY D. R. PATERSON, M.D., M.R.C.P.

ALTHOUGH the history of the following case is necessarily incomplete, inasmuch as I have never seen the patient during any of the attacks, it may nevertheless be deemed worthy of record, perhaps rather on account of its rarity than in the hope of throwing any new light upon its nature. Not a few of the cases already published which have contributed in some measure to the study of this peculiar affection were recorded from accounts given by the patients and their friends, no observations having been made during an actual seizure. The patient who is the subject of this communication was seen by me for the first time three months ago, when she was suffering from pain in the temples and the back of the neck. She then gave me the following particulars, and as she is a well-informed lady, who took an intelligent interest in her symptoms as they developed, I am convinced of the accuracy of the account.

Mrs. X——, who is about sixty years of age, is married and has one child. Beyond the fact of her mother and one sister having suffered from neuralgia, there is little of note in the family history. Within the last five years, however, her brother's daughter—now twenty-five years old—has on two occasions been the subject of facial paralysis. The patient lived in Scotland, where she enjoyed excellent health, until her marriage in 1868, when she took up her abode in the south-west of England. Shortly after the change of residence she began to suffer for the first time from what she thought was neuralgia—pain in both temples and occiput, as well as in the head generally. It troubled her frequently, and was of moderate severity. In the summer of 1870, during very hot weather and after a morning of agonising pain, confined mostly to the left temple and forehead, but felt very acutely likewise in the eye of the same side, she noticed as the pain lessened that there was "something wrong" with the sight. All objects appeared to her to be double, the two images being parallel and the false one lying to the left of the true. To an ordinary observer, both eyes appeared straight except when she attempted to look to the left, upon which a convergent squint became apparent. She was unable to move her left eye outwards, and in order to see objects upon that side was obliged to turn round. There was at no time drooping of the upper lid. This attack, although unaccompanied by sickness, she put down to "biliousness." An ophthalmic surgeon whom she consulted informed her there was "paralysis of one of the nerves of the eye." Within three months the sight had become normal. After this the pain, on the whole, was less, until the spring of 1873, when it became more severe, being limited chiefly to the left side of the head and temple. The patient went out on Good Friday, as the headache had eased considerably. She thought she "caught cold," as next day she was worse, and on Easter Sunday, whilst she was much relieved, she became aware that the *left side of the face* was paralysed. There was no affection of sight, and she was able to close her eye fully, although "it watered and felt weak." In this attack the initial pain was not so severe as in the former, nor did it extend into the eye, being felt chiefly in the side of the head. By the end of July the patient considered herself well. During a very warm summer about six years ago, there was a severe attack of pain, beginning, as before, on the left side of the head, and subsequently becoming general, in which the same eye was affected, with symptoms precisely identical with those in the first—viz., double vision, squint, &c. Whilst the axis of the right eye is directed to the left, there is apparently no movement outwards of the other globe. This attack was not so severe as the former, and within seven or eight weeks the patient had recovered fully. The neuralgic pain still troubles her at times, but much less than formerly. Immediately before the facial palsy set in, the headache was accompanied by loud singing in the left ear, and this has been more or less continuous since that time, increasing in intensity as the pain becomes worse. There has never been any deafness. The patient has always been long-sighted, and has never observed any difference in the seeing power of the two eyes. The pain complained of at present is mostly in the left temple and side of the head. It has never been accompanied by sickness, and is relieved by antipyrin. The movements of both eyes are perfect, no trace of the former affection remaining. The lower facial lines are not so marked on the left side, and this difference is more evident when the patient smiles. The general health is good.

The interest of this case lies, perhaps, in the age of the patient, the long interval between the recurrences, and the fact that the abducens was separately involved. In most of the cases already published the affection dated from youth or infancy, and ceased after middle life. Of recent years the subject of recurrent ocular palsy—more especially that of the oculo-motor, or third nerve—has been attracting attention, and contributions to its study have been made by Senator, Joachim, Saundby, Snell, and Bernhardt, amongst others. According to Senator[1] the cases may be divided broadly into two classes. In one group which are essentially "periodic," and have been compared to migraine, epilepsy, and other paroxysmal neuroses, the intermission is complete. An illustration is afforded by Snell's case[2] of a little girl, eight years of age, in whom periodic attacks of paralysis of the third nerve took place about every six months. The other class has been termed "periodically exacerbating." The attacks do not resemble migraine so closely, headache and vomiting are not so prominent, and in the intervals the parts do not return quite to their normal condition. Thus in one instance re-

[1] Zeitschrift für Klinische Medicin, Bd. xiii., p. 252.
[2] Trans. Ophthal. Soc., vol. v., p. 193.

ported by Saundby[3] of recurring palsy of the oculo-motor the recovery was incomplete, the superior rectus remaining weakened, the pupil larger, and a degree of ptosis persistent. As Gowers says, "the nature of this disease is mysterious." Observers, such as Thomsen, Snell, and Joachim have traced a neurotic history on one or both parents' side. We have some ground, though perhaps insufficient, for regarding our patient as possessing, in a measure, an hereditary predisposition, and this is strengthened by the history, in her niece, of recurrent facial palsy, in which—we have it on the authority of Neumann—the existence of a "neurotic tendency" has frequently been observed. It is not an easy matter to make out a direct exciting cause. Errors of refraction may explain the selection of one globe rather than the other, such a difference having existed in one of Saundby's cases, where the affected eye was astigmatic, and in two examples recorded by Bernhardt.[4] On the other hand, Pel[5] has recently shown that a recurring oculo-motor paralysis may be the prominent symptom in the first stage of tabes dorsalis.

Cardiff.

EXCISION OF JOINTS.[1]

By DR. MAX SCHÜLLER.

Operation for the removal of a Loose Body impacted in the Knee-joint.—The patient in this case was a man aged twenty-three, in whose left knee-joint existed an irreducible joint mouse wedged in between the articular surfaces of the internal condyle of the femur and inner tuberosity of the tibia. To remove the impacted bone I made a longitudinal incision between the patella and the internal lateral ligament, opened the capsule of the joint on a small director, and made, in a semi-bent position of the knee, a forced abduction of the lower part of the leg. By that proceeding the internal condyle of the femur and tuberosity of the tibia projected out of the small opening of the capsule and separated a little from each other, so that it was possible to look through a small space into the interior of the joint. The mouse sat on the eminentia inter-condylica tibiæ, and projected in the space between the inner joint surfaces. It was cut away; then the internal semilunar cartilage,

which was a little displaced, was sewn again on the capsule, and the joint closed. Four weeks later the patient began to walk, after the wound had healed by first intention. Now he can move the joint freely, and use it very well—much better than before. I believe that this method of opening the knee-joint—which allows (as I have proved before on the dead subject) an inspection of the lateral parts of the joint between the joint surfaces without any lesion of the ligament—will be of the greatest use; also in cases of so-called "internal derangement" (Hey)—i.e., of the subluxation and breaking off of a semilunar cartilage, with its irreducible interposition between the articular surfaces. It makes, I believe, the excision of the joint quite unnecessary, and leaves it nearly intact, and also perfectly healthy, and it will prove to be also a better and surer help than the fixing apparatus, which are of little use in all such cases.

Excision of Ankle.—Four years ago I performed on a boy aged fourteen years an excision of the ankle for a suppuration of the joint after an acute osteomyelitis of the tibia. The new-grown joint is of normal shape, and the result is so complete that the boy can run, jump, climb, and share in all sports and gymnastics as well as his fellows.

Excision of Shoulder-joint.—A specimen was shown by me to the Society of habitual luxation—i.e., recurring dislocation of the shoulder-joint,—which had been improved by the excision of the joint. It occurred in a young married woman who for fourteen years had had innumerable dislocations of that shoulder. The head of the humerus was found lying on the inner border of the glenoid cavity. The head showed a depression on the posterior part, which had been in contact with the margin of the glenoid cavity, and presented signs of arthritis deformans. The tuberosities were unbroken, and the scapular muscles untorn, whilst the capsule was not abnormally loose. With the head were removed four loose bodies, one as large as a small walnut. I believe the depression on the head of the humerus was caused by pressure on the inner border of the glenoid cavity, which was also worn away at its upper part; in the lower part there seemed some irregularity which seemed to be the result of fracture. The first cause of the recurring dislocation was, in my opinion, this little fracture of the scapular articular surface, which I frequently find in experimental dislocations.[2] If the shoulder is not fixed by a good bandage after being reduced, this little breaking off of the border of the articular surface may not heal, and will thus give a cause for repeated dislocations. The joint mice are the result of the arthritis deformans. The specimen demonstrates, I believe, that in recurring dislocations of long standing the reduction is mostly of an illusive value, and that the function and usefulness of the arm can only be restored by operative interference.

[3] THE LANCET, vol. ii. 1882, p. 345; vol. i. 1885, p. 57.
[4] Berlin. Klin. Wochenschr., No. 47, 1889.
[5] Ibid., No. 1, 1890.

[1] A paper read before the Berlin Medical Society, July 2nd, 1890.

[2] See M. Schüller's Surgical Anatomy, vol. i., p. 94.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF TRAUMATIC TETANUS; RECOVERY.

By H. HOLDRICH FISHER, M.B. LOND. &c.

AN instance of this disease, especially when a favourable result supervenes, is of sufficient interest to justify the case being recorded.

Albert T——, aged fifteen years, while playing leap-frog with an elder brother on June 18th, was accidentally knocked over, and in doing so tore down a flap of skin from his forehead. The skin was laid in position and strapped over by his mother, and nothing unusual occurred until the 26th, when she noticed that the boy could not open his mouth. He was brought for advice on the 30th, and when seen the jaws could not be opened more than half an inch, but there was nothing to account for it. There was a wound on the forehead which had begun to suppurate, though the flap of skin had in great part united. This was dressed, and the boy ordered to bed. On July 1st he was seen at home; the jaws were more tightly closed, he had an anxious expression, some risus sardonicus, and the muscles of the neck were standing out prominently in a state of tonic spasm. To speak at all, he had to depress the lower lip with his finger. He was able to swallow; the pulse was quiet, and the temperature normal. He was ordered nourishing fluids, an icebag to the neck, a quiet and dark

room, and a mixture containing five minims of tincture of belladonna to a drachm of water every four hours.—July 2nd: Body stiff; begins to start at times.—Abdominal muscles hard; limbs relaxed; jaw opens somewhat when asleep.—3rd: Spasmodic attacks occur once or twice a day, during which he bites his tongue. Wound discharges some pus, and to-day a thread of grass fibre was seen, and removed through the sinus.—5th: State of complete and continuous opisthotonos now present, with occasional spasmodic seizures, during which he becomes cyanotic. Is fed with difficulty, so that nutrient enemata were ordered to be given, as swallowing brought on an attack. The mixture was changed to one containing three minims of chloroform, three minims of tincture of digitalis, and ten minims of spirit of sulphuric ether, in a drachm of water, every four hours, as the heart and pulse seemed failing, with belladonna liniment to spine. From July 8th the spasmodic attacks began to be less severe; opisthotonos continued; but the arms became stiff; the swallowing was easier, but he had lost a good deal of flesh.—July 28th: To-day another piece of grass fibre was removed from the wound, which then soon healed. For the first time he was just able to open the mouth and protrude the tip of the tongue.—Aug. 3rd: Muscular spasm nearly gone; sleeps and swallows well. Medicine omitted. About the 10th he was up and well. Throughout the course of the disease the temperature was normal, and it may be concluded that the irritation from the grass fibre was a potent factor in lighting up the mischief.

Kettering.

CASE OF POISONING BY BICHROMATE OF POTASH; RECOVERY.

By A. E. BULLOCK, M.B. EDIN.

SEEING that, according to Taylor, cases of poisoning by this drug are extremely rare, I venture to record the following.

W. W——, aged forty-seven, a furniture dealer's *employé*, having finished work one night, took up a jug in the shop and drank a hearty draught of the contained liquid, which he imagined to be cold tea, but which afterwards proved to be a solution of bichromate of potash, used for staining wood a mahogany colour. Finding by the bitter taste that he had made a mistake, he immediately started for home, but was violently sick on the way. The sickness continued with much violence, accompanied by profuse diarrhœa and great pain in the epigastrium. I arrived about an hour after he had taken the liquid, and found him greatly collapsed, with cold sweats, an anxious expression of the face, pulse almost imperceptible, pupils dilated, extremities cold, and severe cramps in the calves and thighs. I immediately washed out the stomach with warm water by means of a flexible tube and funnel, the liquid first drawn off and the vomited matter consisting of a dark-brown liquid with some blood-clots and much mucus. Hot bottles were applied to the extremities and poultices to the epigastrium. Some warm brandy-and-water was left in the stomach, and remained long enough for some absorption to take place. A mixture containing bismuth, magnesia, and chlorodyne was given every two hours. The first two doses were rejected, but after the third he sank into a good sleep, and next morning was much better, and after being kept for three days on fluid diet was in his usual state of health. The quantity taken was about five ounces of a saturated solution of the salt.

Leamington.

SINGULAR ATTEMPT AT SUICIDE.

By JOHN P. MATHIE, M.B.

THE following case is interesting on account of the nature and situation of the wounds, which, on first consideration, led the writer and Dr. Ashley Smith, who saw the case with him, to suspect homicide.

On June 21st, about 5 A.M., I was called to see W. C——, ironworker, aged fifty-eight, who had been found lying injured at the back door of the kitchen of his house. On arrival I found the man unconscious and in a collapsed condition, his radial artery faintly perceptible to the touch, his face and hands being covered with blood. The forehead showed two ragged wounds, one extending two inches and a half from the root of the nose upwards, whilst, crossing this transversely, was another three inches long. The tissues round the wound were beaten to a pulp, and an area of bone exposed the size of a crown piece. Two transverse fractures were visible on the exposed frontal bone. The floor of the kitchen was covered, and the walls, ceiling, and furniture bespattered, with blood. Small pieces of skin were found on articles lying about and on the walls. On the hearthstone lay an axe, weighing three pounds and three quarters, thickly covered with blood on the handle and blunt end. There was a ring of clotted blood round the middle of the handle, where it had been grasped. In three hours consciousness returned, and the injured man asserted that the wounds were self-inflicted. The ceiling was less than six feet high, and one of the cross-beams showed marks which corresponded with the sharp end of the axe. Judging from these marks, at least six blows must have been struck. The wounds must have been inflicted whilst the body was bent forward, as the height of the room would not allow him to stand upright. He was removed to the hospital, and afterwards to a lunatic asylum. It appears that for some time he had complained of an intense frontal headache.

Bilston.

XEROSIS; ESSENTIAL OR PRIMARY SHRINKING OF THE CONJUNCTIVA; PEMPHIGUS OF THE CONJUNCTIVA.

By S. JOHNSON TAYLOR, M.B., M.R.C.S.

THIS interesting but fortunately rare disease has, up to the present, I believe, proved incurable, in spite of many methods of treatment which have been tried; sooner or later the end is the same—the whole conjunctival sac shrinks, and the cornea becomes opaque. Many applications have been used; perhaps most success has been obtained by partial or complete union of the edges of the lids. I wonder if, in the early stages, the disease could be arrested by transplantation of conjunctiva, such as from the rabbit; it need not be done all at once, but little by little, and could readily be performed under cocaine. Dr. Wolfe's method might be used.

I do not know whether this has ever been suggested or carried out; very likely it has; it is difficult to hit upon something new nowadays. I have not seen a case of late, but should be disposed to give this method a trial. Where the outlook is so dark I think one might try anything; it could but fail. My plan would be to remove a flap of the diseased conjunctiva, beginning with the inferior sac, and to put in a considerably larger piece of healthy conjunctiva—say from the rabbit.

Norwich.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

MIDDLESEX HOSPITAL.

RUPTURE OF THE COVERINGS AND PROTRUSION OF BOWEL FROM AN OLD UMBILICAL HERNIA; OPERATION; DEATH.

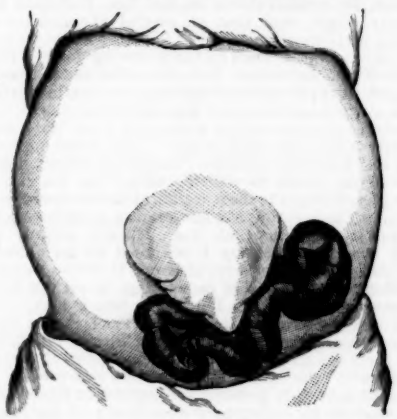
(Under the care of Mr. GEO. LAWSON.)

EXAMPLES of the rupture of the coverings of hernial protrusions and the escape externally of the contents of the hernia are rare, and the condition is one of extreme gravity. Fortunately in many of the recorded instances prompt and careful treatment has resulted in the recovery of the patient, especially when the amount of primary shock has not been excessive or the duration of exposure of the protrusion very prolonged. Usually the accident has occurred to the subjects of old-standing hernia—either umbilical, femoral, or inguinal—in whom the coverings of the hernia have become thinned, and a sudden strain has proved too much for the unsupported sac. Not infrequently

there has been evidence, in the general condition of the patient, of degenerative changes in the body tissues. Of cases under treatment for this accident there is that of the woman under the care of M. Mersenne,[1] in whom there had been pre-existing ulceration of the skin over an umbilical hernia. The immediate cause of the rupture was coughing, dependent on disease of the lungs, from which she died six weeks later. In another case under the treatment of Mr. Holmes Coote[2] the patient, a lady who had sustained rupture of an umbilical sac and protrusion of the intestine, recovered after the necessary operation. No reason for the occurrence of this rupture is mentioned in the note to which we have referred. Mr. Pilkington of Ormskirk[3] had a lady aged seventy-three under his care early this year, who, after an attack of vomiting, was found to have sustained a small rent in the coverings of a large umbilical hernia, and the protrusion through it of a coil of intestine which had become strangulated. The opening was enlarged, the bowel returned, and the wound closed by means of quill sutures. There was much collapse, but she made a good recovery. The hernia had been unsupported by any apparatus and had attained a large size. The patient could not say when the bowel first escaped. Reference may be made to cases which we have published in our columns where rupture of the coverings of femoral[4] and inguinal herniæ[5] has been met with; they are of much interest. For the notes of this case we are indebted to Mr. P. Whyte Rattray, who was then house surgeon.

M. A. P——, married, was admitted at 5.30 P.M. on Nov. 14th, 1887, with intestine protruding through the abdominal wall. She is a very stout, strongly-built, healthy-looking woman, but suffering much pain and extremely collapsed. At 9.30 A.M. on the day of admission when straining at stool, she felt something give way and immediately experienced great pain. She went to her room, and on undressing discovered that the intestine had protruded. She immediately sent for her usual medical adviser and awaited his arrival; he did not call till 4.30 P.M., and immediately ordered her removal to the Middlesex Hospital.

On admission the patient stated that she had had an umbilical hernia of many years' standing. The abdominal wall in the umbilical region was found to be raised into a conical eminence about the size of a child's head; the umbilicus, very much thinned out and almost completely obliterated, occupied the summit of this eminence; and protruding from the middle point of the line of union of this umbilical swelling and the abdominal wall below were three coils of small intestine. The



abdominal wall had evidently given way by thinning and stretching. The protruding intestine was fairly distended, and, along with the accompanying mesentery, was very red and congested; a thin, serous, blood-stained fluid was oozing and running off in small quantity from its surface. The mesentery and bowel were tightly nipped at the abdominal wound, and strangulation appeared imminent. The patient was in great pain and complained greatly of thirst. Pulse small, frequent, and very weak. Surface cold and pale. She was removed from the casualty room to a bed in Queen ward. A quarter-grain injection of morphia was administered hypodermically; hot bottles were placed around her. The protruded intestine was enveloped in protective wrung out of warm carbolic lotion and covered with a thick layer of sal alembroth wool. About 7.30 P.M. the patient was removed to the operating theatre and placed under an anæsthetic, and Mr. George Lawson operated. A director was then passed into the wound and the abdominal wall cut upwards and downwards with a probe-pointed bistoury above and below the protruded bowel so as to secure a wound about six inches long. The upper incision was made into the umbilical swelling and the lower in the abdominal wall, both in the middle line. The bowel was washed with a solution of boracic acid and replaced in the abdominal cavity. Considerable difficulty was experienced in returning the bowel. The edges of the abdominal wound were pared, sutures were inserted, and it was dressed with iodoform protective and sal alembroth wool. A quarter of a grain of morphia was hypodermically administered after her return to the ward, and two teaspoonfuls of brandy ordered every hour.

Nov. 15th.—At 7 A.M. Mr. Rattray was called to the ward in consequence of blood having been detected running through the dressings. A little blood was found along the left groin. The dressing was partially removed. The hæmorrhage had been extremely slight (perhaps two or three drachms), and had found its way under the protective to the lower part of the dressing and on to the groin. The blood had oozed from the lower part of the incision. Dressings were reapplied, and pressure secured by strapping. The patient had been very quiet overnight. The pulse was now rapid, feeble, and irregular, and the extremities cold. She died at 8.30 A.M.

The following is the report of the post-mortem examination made thirty hours after death:—Weather cold and fine. Rigidity well marked. The woman was extremely obese, and there was marked cyanosis of the face. The breasts were flabby and pendulous. There was an enormous hernial protrusion in the region of the umbilicus, having a circumference of twenty-one inches at the base, and projecting downwards and forwards from the abdomen a distance of six inches and a half. An incision six inches long had been made in the median line, half being through the lower wall of the hernial sac and the other half in the linea alba below it, the edges being brought together by ten silk sutures. On removing these and inspecting the edges of the wound, no sign of union was visible; the edges were clean cut and in accurate apposition, the lacerated edges of the rupture having been pared away at the operation. The hernial sac was now fully laid open. The peritoneum lining it was of opaque white colour and considerably thickened. It was lined by a layer of omentum containing much fat between its layers, and being adherent to the wall of the sac at many points. It contained, besides, the middle eight inches of the transverse colon and the upper part of the jejunum. These coils of gut were adherent to one another and to the wall of the sac. The opening into the general peritoneal cavity at the neck of the sac was large enough to admit a man's fist. The intestine which had protruded externally had been reduced into the peritoneal cavity, and was seen at this stage to be intensely engorged. The whole abdominal cavity was now opened up. There was no fluid in the dependent part of the sac. Marked congestion of the intestine commenced four feet and a half from the ileo-cæcal valve, and continued for six feet, the peritoneum, however, retaining its normal glistening appearance. For the next three feet the gut (which had been extruded) was almost black from engorgement. The serous surface had lost its polish, and was covered with a thick layer of inflammatory lymph. Its mesentery was likewise engorged with venous blood. Higher up for another four feet the intestine was congested, and resembled that below the extruded portion. On laying it open, the portion most engorged presented numerous submucous petechial extravasations; but there was no ulceration, distension with gas, or hæmorrhage into its lumen. The large intestine contained a few scybala, and was normal except that the rectum in its second part showed three superficial ulcers, probably caused by habitual constipation. The stomach was greatly dilated, its contents being gaseous

[1] Journal de Méd.-Chir. et Pharm., &c. Paris, 1765, vol. xxiii., p. 557.
[2] THE LANCET, vol. ii. 1884, p. 276. [3] Ibid., vol. i. 1890, p. 1008.
[4] Ibid., vol. i. 1883, pp. 585, 754. Ibid., vol. i. 1890, p. 401.
[5] Ibid., vol. ii. 1884, p. 276. Ibid., 1826.

with the exception of a small residuum of undigested beef-tea. It measured 14 in. horizontally and 6½ in. in the vertical direction. Its mucous membrane was normal. The right kidney weighed 5½ oz. and the left 6 oz. The kidneys were considerably congested; the capsules stripped easily. The pelvis was loaded with fat. The adrenals, ureters, and bladder were normal. The spleen was normal, but small. The liver weighed 50 oz.; it showed on section universal dilatation of the bile vessels of old standing. The common duct was patent. There were twenty-seven facetted cholesterin calculi in the gall-bladder. There was a firm adhesion over the posterior aspect of the base of the right lower lobe. The heart weighed 16¼ oz. The pericardium contained a small quantity of blood-stained fluid. The anterior surface of the right ventricle was covered by a thick layer of fat. The right cavities were filled with soft black clot. There was marked post-mortem staining of the endocardium. Valves normal. A few raised patches of early atheroma in the ascending aortic arch. The lungs showed engorgement and œdema of their lower lobes; they were otherwise normal.

BRADFORD INFIRMARY.

A CASE OF DETACHED RIGHT OVARY; REMARKS.

(Under the care of Dr. BELL.)

THE condition described below is one of very great rarity; indeed, it may be said to be a pathological curiosity of which there are few, if any, recorded instances. The remarks which are appended give the principal references to the literature of the subject, and it will be noted that the separated ovary has nearly always been found enlarged and diseased. Cases presenting similar features, to which reference is made below, are described by Mr. Knowsley Thornton[1] and Professor Turner.[2] The former found a left dermoid cystic ovary completely twisted off from its pedicle and adherent to omentum on the right side; the latter found in a dissecting-room subject an ovary the size of a fœtal head separated from its pedicle and adherent to the peritoneum. For the account of this case and the remarks appended to it we are indebted to Dr. James Kerr and Mr. William Horrocks.

L. S——, a washerwoman aged fifty, was admitted on April 26th, 1890, suffering from typical pernicious anæmia of about four months' duration. She was multiparous, but no menstrual history was elicited. Death occurred on May 2nd.

Post-mortem notes.—The usual appearances after death from pernicious anæmia; fat of body very yellow; soft flesh; fatty degenerations; "tabby cat" striation of heart muscle. On examining the abdomen, an oval body was found lying loose on the right side of Douglas' pouch, with its long axis across the pelvis. On removal it was seen to be lemon coloured, in form ovoid, but flattened in front and behind, one end being truncated, the other bluntly pointed. It was covered, except at one edge, by a membrane which was smooth except where raised by hard underlying granules, which were especially numerous over the part devoid of membrane, and were there covered by a thin stratum of fat. The loose body weighed 295 gr.; its greatest length was 1⅞ in., breadth 1⅜ in., and thickness 1⅛ in. On section it was seen to consist of fibrous tissue undergoing fatty degeneration, and having calcareous matter deposited either irregularly or in the walls of collapsed cavities in its interior. Small pieces of the loose body and of the left ovary were taken, and sections cut. The section of the left ovary contained a large amount of fibrous tissue, showing extensive fatty degeneration and irregular deposits of calcareous matter. Under a low power (Zeiss, oc. 2, obj. A) the structure of the loose body was almost exactly similar. Under a higher power (Zeiss D) the separate cells of the loose body were hazy and indistinct, the whole field being dotted with unstained, highly refractive granules. These granules wese irregularly distributed, but at parts lay along lines where vessels had apparently run, or along broad wavy lines resembling the mark of a corpus luteum. In the left ovary the degeneration was less marked, and the structures more distinct. The uterus was lying in a normal position, the broad ligaments being similar on the two sides. The Fallopian tube on the left side showed a normal fimbriated margin, with a small hydatid of Morgagni attached; on the right side the tube was thicker near its outer end, which was without a fimbriated margin. The organ of Rosenmüller was shown somewhat indistinctly on the right, but better on the left side; fundus uteri symmetrical, its junction with the Fallopian tubes being similar on both sides. The left ovary was lying in a normal position, its mesentery being rather long, with a small attachment to the ovary. On the right side there was no ovary, but behind the Fallopian tube the oval body lay loose in Douglas' pouch. The cervix uteri showed the anterior lip separated by deep fissures from the posterior. There was no scar or puckering on the uterine peritoneal surface; a slight prominence on the posterior surface of the uterus was seen on section to be a small intramural fibroid. The uterus from peritoneal surface over fundus to cervix uteri measured 2⅝ in., the cavity measuring 2¼ in. vertically. On section it was found symmetrical, and the orifices of both Fallopian tubes pervious. Near its outer end the right Fallopian tube was dilated, the cavity containing a little clear fluid; its outer end was not pervious. The left Fallopian tube was normal. The left ovary measured in greatest length 1$\frac{9}{16}$ in., breadth 1⅛ in., and thickness ⅝ in.; its surface was covered by a smooth membrane, through which hard granules could be felt; on section it was gritty to the knife, and numerous small cysts, with cretaceous matter thickly deposited in their walls, were cut across. Most of these were collapsed, but the largest, which measured about ¼ in. by ⅜ in., contained a thin serous fluid. There were no signs of peritonitis, of either recent date or old standing.

Remarks by Dr. KERR and Mr. HORROCKS.—The extreme rarity of loose bodies in the abdomen merits a careful consideration of the nature of this body and the cause of its detachment. There was no doubt that it was quite free, and the superficial appearance and microscopical examination of the tissue suggested that it had undergone prolonged maceration in the peritoneal fluid. Loose bodies in the abdominal cavity are usually detached appendices epiploicæ or uterine fibroids. Sir Spencer Wells mentions a loose body found by him during an operation on the abdomen; it consisted entirely of fat with cholesterin crystals. The loose body here described showed definite, although fatty, fibrous structures, and certainly was not a detached appendix epiploicæ. A detached myoma would show more distinctly its muscular and fibrous nature; it would be unusual for it to contain cysts. The presence of a small intramural myoma would favour the idea that the body was a detached myoma, but against this is the fact that myomata are frequently single, and that on careful examination of the uterine peritoneum no scar was found. The conclusion that the body is ovarian rests on the following facts. The symmetry of the uterus and Fallopian tubes shows that during the growth of the uterus there were two ovaries, so that the right ovary must have been formerly present, and, as there is no trace of an atrophied organ, the loose body probably represents this lost right ovary. The shape of the loose body and the ovary is similar; the surface covering, probably peritoneum, which is wanting along one margin, has a strong resemblance to the marginal attachment of the normal ovary. The fact that the left ovarian mesentery is slender makes it possible that the delicate nature of the right ovarian mesentery predisposed to its detachment. The size of the loose body, although it bears a marked resemblance in its relative proportions, is greater in all its measurements than the left ovary, which may, however, have undergone further involution. The fact that the membrane covering the loose body is not thrown into folds, and that there are no vascular connexions, shows that the body must have been larger than the left ovary when it was attached, and this perhaps predisposed to its detachment. The macroscopic appearance of sections of the loose body and the left ovary are very similar, each showing collapsed cysts, with calcareous deposit in the walls. The absence of any definite cells in the Graafian follicles is accounted for by the advanced fatty change which has taken place. The collapsed cysts seem to be degenerated Graafian follicles with calcareous deposit in the surrounding stroma. Rokitansky[3] describes a similar appearance. The loose body resembles the left ovary in shape, proportions, position of attachment, and macroscopic and microscopic appearances; and it seems

[1] Brit. Med. Jour., vol. ii. 1882. [2] Ed. Med. Jour., vol. vi. 1861.

[3] Opera, New Syd. Soc., vol. ii., p. 337.

quite certain, therefore, that the loose body is the missing right ovary detached. A curious fact is that the body lay perfectly loose, and excited no inflammation. Cases are recorded where an ovary has become adherent to the omentum, ultimately losing all attachment to the broad ligament and becoming greatly displaced.[4] In a case mentioned by Doran of operation for dermoid cyst of the left ovary, the right ovary was found attached only by a pedicle "as thin as a large nerve," and had formed no new adhesions.[5] In Sir Spencer Wells' case the appendix was lying quite free in the abdomen, so that a loose body of inert nature may lie loose in the abdomen and be tolerated. Cases are known where the filling and emptying of the rectum have caused twisting of the pedicle of left ovarian tumours, but in this case it was the right ovary; still it seems likely that the greater size of the right ovary made it more liable to be caught, and that a slender mesentery similar to the left ovarian mesentery made a slight amount of twisting sufficient to cut it off.

[NOTE.—The case of calculous pyelitis treated in the Charing-cross Hospital, and a report of which was published in THE LANCET of Aug. 16th, was by an error stated as cured. We are asked to state that the patient had, when last seen, a lumbar sinus, discharging pus and urine.]

Notices of Books.

Proceedings of the New York Pathological Society for the Year 1889. Printed for the Society. 1890.—The most noteworthy feature of this volume, which comprises the description of many interesting pathological specimens, is the Middleton-Goldsmith Lecture by Dr. Reginald Fitz. Its topic is Acute Pancreatitis, and it evinces a wide acquaintance with the literature of an obscure subject. The publication cannot fail to arouse much interest, since it is clearly shown that the affection may arise secondarily to a comparatively common disease — viz., gastro-duodenitis. The further results of such inflammation are very serious. They involve suppuration and often gangrene of the organ. One remarkable case is given where the gangrenous pancreas was passed by the bowel, and the patient survived (he was in good health seventeen years after that event). But, as a rule, of course such cases end in death. Hæmorrhage also may occur into the organ, and this may itself be a precursor to the inflammation. The signs of the condition may simulate those of perforative peritonitis, irritant poisoning, or acute intestinal obstruction. Of especial interest is the association with acute fat-necrosis in the omentum and elsewhere. In fine, Dr. Fitz has written a memoir which must serve as the basis of all subsequent study of pancreatitis.

Practical Chemistry for Medical Students. By SAMUEL RIDEAL, D.Sc. Lond. London: H. K. Lewis. 1890.—There is one thing which serves to distinguish this little work from the rest of its class—it is for the exclusive use of the student of medicine who intends to pass the exact ordeal as at present required by the Conjoint Board. It is, in fact, built with a somewhat dangerous closeness upon the hard-and-fast lines of the Synopsis, which exhibits in more than one respect several peculiarities. So long as the Synopsis remains as it is, so long may the book with advantage be referred to. Nothing more can be claimed for this method of teaching the subject than that it is admirably adapted for pass purposes. We notice the absence of analytical tables, which commonly find a more or less useful place in most practical chemistry treatises.

The Electric Illumination of the Bladder and Urethra as a means of Diagnosis of Obscure Vesico-urethral Diseases. By E. HURRY FENWICK, F.R.C.S., Assistant Surgeon to the London Hospital, and Surgeon to Out-patients to St. Peter's Hospital, &c. With 54 Illustrations. Second Edition. London: J. & A. Churchill. 1889.—In calling attention to the second edition of this *brochure*, it is only necessary to point out that the clinical portion of the work is practically new, being both more extended and more personal to the author than in the former edition. There are several excellent photogravures of clay models of bladders with various forms of polypus and tumour.

Faith Cures; their History and Mystery. By AURELIUS B. GLEDDON. London: *Christian Commonwealth* Publishing Company, Limited. 1890.—We have here a very fair discussion of what constitutes the curative power exercised by faith. The author does not deny that such a power exists or that it emanates from a divine source. His whole argument is directed to show that the means required for its operation are present, as will and emotion, in the mind of every sufferer, and only require to be stimulated in order to place him in the most favourable position for spontaneous recovery. The miraculous force at work is in fact the galvanising influence of awakened hope and will, acting through nervous channels previously unemployed, and restoring normal activity to their associated organs. A sketch is given of the influence exerted by these wholesome energies from the earliest ages till the present day, and it is shown how the same process, under whatever authority applied, has ever been fruitful in recoveries, wonderful, indeed, but not really supernatural. Fallacies, as is truly said, easily arise when subjective evidence is alone relied upon. The significance of previous or concurrent medical treatment as affecting the result is justly insisted on. A chapter on scriptural references to the use of means may be commended to faith healers in general. The author's advocacy of the combined use of prayer, faith, and means proves him to be one whose belief in a God is compatible with a true sense of personal responsibility.

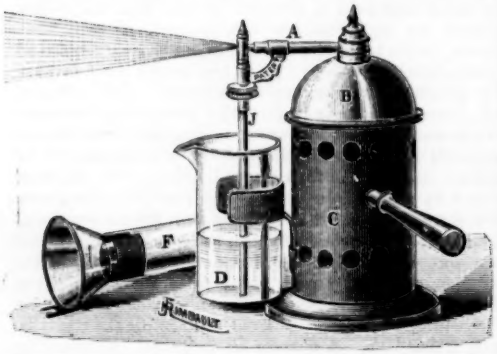
Orient Line Guide. Edited by W. J. LOFTIE, B.A., F.S.A. London: Sampson Low and Co.—The fourth edition of this useful book has reached us. It purports to contain chapters for travellers by sea and by land, and no one who reads the interesting chapters will fail to be inspired with a longing desire to enjoy in reality the various delights with which the volume charms the imagination of the reader. Home scenes are depicted with a master's hand, and eastern lands are brought so vividly before the mind by text and picture and chart as to make one fancy himself already a traveller on board one of the Orient line of steamships. The book is intended to bring information of the route and arrangements before intending passengers, and this it does in the form of a connected narrative. It contains accounts of countries and cities, descriptions of coasts and naval engagements, chapters on natural history and astronomy, and, what will interest most invalid readers, a well-written article by Mr. James Struthers, M.B., on Health at Sea, in which the author details the method of obtaining the full benefit of the voyage. The present edition has been somewhat amplified, and contains notes of interest in regard to the Red Sea, and further particulars of the Suez Canal. It will be found most useful as a means of reference on board, and will afford a ready stimulus to flagging conversation during the protracted voyage. Beyond its practical utility, as a literary work it is of high merit, and the engravings and various maps and charts are executed with great care and skill. The pages illustrating the flags of various nations and the systems of signalling at sea will afford much interesting reading.

[4] THE LANCET, April 7th, 1883.
[5] Doran, Diseases of Ovaries, p. 122.

New Invention.

NUSSBAUM'S STEAM ATOMISER.

THIS is a simple form of the ordinary spray producer used in many hospitals for antiseptic surgery. The instrument consists of a copper spirit lamp and a copper boiler, separated by a cylindrical framework of perforated tin, to which a handle is attached. On applying the heat to the boiler the steam is conducted along a tube about an inch and a half long, which meets another tube at right angles proceeding from a glass jar containing some medicated solution. At the point of junction there is an aperture through which the steam passes, so small as to produce a fine spray. The idea is a good one, although simple, and is at least an advance on the ancient tin kettle vaporiser, which many



practitioners, despite the progress of the age, use at the present day. It is smaller, but, as it requires to be held in a vertical position, it cannot be so accurately adjusted to suit the position of the patient. Two modifications we would also suggest—namely, the addition of some arrangement for extinguishing the spirit lamp when it is not in use, and a means of tightening the safety valve when more pressure is required from the spray producer. On the whole, it will be found a most useful article to both practitioner and patient.

THE LEUCOCYTE AS THE SURGEON'S FRIEND.

To the Editors of THE LANCET.

SIRS,—It should always be agreeable to make an *amende honorable* to one whom we have unwittingly injured or thought meanly of through ignorance. The humble station of the individual injured should not interfere with the *bona fides* of our act of reparation. If the researches of Metchnikoff, of Tchistovitch, and Ruffer, to which Sir Joseph Lister gave such prominence at Berlin, are unambiguous, it would seem that we must learn to think better of the lowly leucocyte, and in the *rôle* of a phagocyte welcome it as the surgeon's friend. Of late years, though it has much exercised the mind of the physiologist, the white corpuscle has encountered mostly obloquy at the hands of the surgeon. As the essential constituent of pus, its presence was accounted undesirable; the tendency to suppuration was proclaimed to be a world-wide baneful epidemic (Hueter), and an elaborate system of precautions was devised to secure deliverance therefrom. How to get rid of pus, to prevent its formation, to evacuate it early, to anticipate routes for its removal, to substitute a simple serous discharge, have been the problems which have engaged some of the best surgical thought of the last twenty years. Meanwhile the physiologist has patiently studied the sources, the habits, the modes of propagation, and even the appetites of the lowly and the outlawed leucocyte. The variously named, wandering, amœboid, lymph or pus cell was found to have more extensive and far-reaching functions than its more ruddy and more numerous blood relatives. Its embryonal affinities and consequent reference to pathological neoplasms, once recognised, shed abundant light upon our previously obscure knowledge of the nature of new growths. Moreover, it was found that through the microscope on a warm stage, its omnivorous tastes could be studied with as much precision as the feeding of gold-fish in an aquarium or the ducks in the park. Particles of cinnabar, aniline blue, the corpses of defunct red corpuscles were found not to come amiss to the ingestion of the living leucocyte, and thus prepared the way for the belief that it would not prove more fastidious when bacteria were served to it as food. Metchnikoff claims to have shown that the immunity of the frog to anthrax under ordinary circumstances is due to phagocytic action of its leucocytes. Ruffer maintains "that the inflammatory process consecutive to the introduction of the bacilli of quarter evil under the guinea-pig's skin is a protective process, and serves a useful purpose," owing to the phagocytic action of amœboid cells. Tchistovitch claims to have demonstrated a similar action on the parts of the lymph cells in the lungs when bacilli were introduced into the air passages. Of course, a wide generalisation has been constructed upon these somewhat restricted premisses, and the daily and weekly press, in accord with that "vulgarisation of medical science" which has received your severe condemnation, have waxed eloquent over the "new battle of life" waged between the defending army of leucocytes and the invading hosts of hostile bacteria. Without accepting unduly the considerations set forth, it may be instructive to inquire whether the means of defence at the command of the animal body against noxious agencies from without do not cut the ground from under the feet of the rigid antisepticist who seeks salvation from without rather than from within, who insists with painful solicitude on the mint and anise, or the thymol and eucalyptus of antiseptic dressings, while subordinating to a lower place the weightier matters of healthy blood and normal nutrition.

It would now appear that "healthy living tissues," "organising blood-clot or lymph," and "normal serum" have powerful anti-bacteric properties; that the lowly leucocyte can wage a smart single-handed combat against a multitude of bacilli; and even "that the inflammation excited by the microbe becomes, through the medium of the leucocytes, the cause of its destruction." Indeed, we may conclude that, considering the successful war daily waged by the living body upon organisms which enter at every breath, are swallowed at every meal and thrive upon the surface of the skin, it would be fair to accord to living tissue and living blood, in healthy states, a high position as a most successful, most subtle, and most innocuous antiseptic. The spray is accordingly abandoned by its author, since "floating particles in the air may be disregarded in our surgical work," and its use was based on an assumption of its destruction of air-borne germs which is admittted to be "physically impossible." Why water-borne germs should be deemed to be worthy of more regard is less obvious. Can they more successfully baffle the phagocytes than the bacterium lurking in unsterilised ligatures $\frac{1}{25}$ inch in diameter? For this is the explanation vouchsafed for aseptic results when non-antiseptic ligatures are used. The more the phagocyte theory and the resistent power of living tissues to putrefaction are emphasised, the more impossible will it be to maintain "antisepticism" as apart from instead of a part of "asepticism." To maintain that the two differ *toto cœlo*, while insisting that the former term includes *inter alia* free ventilation, dependent openings, the dry dressings of McVail, and "the judicious selection of cases for operation," while it may exclude the spray, carbolic acid, and possibly irrigation of the wound and drainage, is surely to sacrifice comprehensibility to comprehensiveness. The flood-tide of cleanly surgery which set in between 1865 and 1875 carried "Listerism" on the crest of the wave, and all practical surgeons are grateful for the work its author has done in drawing attention to chemical means of prevention of putrefaction, no less than for his more recent researches, which tend to show how much the living tissues can perform in the same direction for themselves.

I am, Sirs, yours faithfully,

W. J. COLLINS, M.S., M.D. Lond.

Reform Club, Aug. 21st, 1890.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 13, 1890.

IN the Annual Report of the Veterinary Department of the Board of Agriculture for the year 1889 evidence is forthcoming that the new Board of Agriculture is to be something more than a bureau of statistics, and Professor BROWN'S report to the President of the board on Pleuro-pneumonia and Swine Fever, with the appendices by the inspectors and Professor CROOKSHANK and translation of reports of foreign papers, enables us to form some idea of the work carried on under the supervision of the director. It must be confessed that, with the exception of the statistical portion, which is exceedingly well compiled, the report is at first sight somewhat disappointing; but when it is remembered that it is within quite recent years that any endeavour has been made in this country to carry on accurate experimental research in certain departments of veterinary medicine, one cannot but feel that a well-meant effort is being made by those in authority to lay a foundation on which more accurate and more extended researches may be based. It is disappointing, for instance, to find that of the three papers dealing with disease in cattle, only one is from the pen of a British investigator, the other two being translations of foreign papers, admirable in themselves, but scarcely fitted to represent work done in the Veterinary Department of the Board of Agriculture in this country; and we should have thought that the pages of a veterinary journal, of which we have at least two admirable issues, one in London and one in Edinburgh, would have afforded a better medium for the publication of these papers than the annual report of the Veterinary Department. Following, however, as these papers do on recent excellent reports, it is scarcely fair to be hypercritical, and they must be looked upon as papers which the director of the department would like to have seen as the outcome of work done here.

In the third paper, Professor CROOKSHANK reports on the Eruptive Diseases of the Teats and Udders of Cows, and on an Eruptive Disease of the Horse known as Constitutional Grease or Horse-pox, giving a *résumé* of work that he has published elsewhere; but as it deals largely with matters of great interest to veterinarians, it is appropriate that it should be published in the appendix to the director's report. And although it is impossible to agree with all the conclusions at which Professor CROOKSHANK arrives, one cannot but feel that his laborious and extensive researches into the history of cow-pox will be of extreme value to those interested. It would be out of place to give any careful analysis of the paper here, but it is necessary, able as Professor CROOKSHANK'S paper is, to enter a vigorous protest against his course in discrediting the descriptions and diagrams of competent observers because they do not happen to fit in with his own theories; and although one accepts the record of Professor CROOKSHANK'S own observations as perfectly accurate, one does not feel inclined to accept his strictures on CEELY'S and SACCO'S plates and descriptions of cow-pox vesicles. From what Professor CROOKSHANK has already published, it would have been thought that he could not allow the influence of "mixed infection" in modifying the appearance of a typical vesicle to have escaped his notice. He himself points out that his so-called inoculation vesicles are the result of inoculation from selected vesicles in which all the typical characteristic appearances are present, and from which, as far as possible, the results of mixed infection are excluded. He acknowledges that even in the different cases that have come under his observation the eruptions of the ordinary cow-pox present very different appearances, but he ignores entirely the fact that these different appearances may be the result of the action of organisms which, finding their way into the vesicles or into the inflamed tissues, may so far modify the appearance of the eruption that they do not represent the umbilicated appearance usually described, and we have no right to assume that such accurate observers and writers as CEELY and SACCO would figure and describe appearances that were not present in cases that they themselves investigated. In certain cases, especially where the animals kept were under observation during the course of experiments, the conditions of cleanliness would be much more favourable to the development of typical vesicles and pustules than in the filthy cow-houses with which we are familiar, not only from the description of older writers, but from actual inspection of modern cow-houses; and the eruption would undoubtedly be more typical in appearance from the fact that opportunities for mixed infection occurring would be greatly diminished in number, and it would therefore be expected that here the characteristic appearances of clusters of vesicles "coloured blue with a silvery lustre," and distinctly umbilicated, would be much more likely to occur than in the often described cases in which the conditions were essentially favourable to mixed infection. In connexion with grease or horse-pox and its relation to syphilis, Prof. CROOKSHANK does not give a single fact beyond the very casual one "that the manifestations of horse-pox are sometimes venereal"; but he gives a considerable number which tell very markedly against his own theory, and one cannot but feel that if there were the remotest relation between the two much would have been heard of it in connexion with the many inoculations into children that are so faithfully recorded by different observers. The above rather strong statements are made not with any desire to discredit the paper, but rather because the paper is so important that it is necessary to point out the weak links and actual gaps in an otherwise well-reasoned chain of evidence.

Of the translations it is scarcely necessary to speak; but to those who have somewhat indefinite ideas as to the various forms of pleuro-pneumonia and swine fever the papers, one by Dr. POELS and the other by Drs. SEMMER and NONIEWICZ, may be commended for their careful consideration. Perhaps, however, the most important part of the appendix is that which relates to the formation of the Board of Agriculture itself, of which the present volume may be considered as the first purely official publication. The Board was established on September 9th, 1889, by the appointment of the President of the Board, and to its jurisdiction were transferred: (*a*) the Agricultural Department of the Privy Council Office, and (*b*) the Land Commissioners for England; there was also power given to the Treasury and to Her Majesty by Order in Council to transfer

to the Board the Ordnance Survey Department of the Commissioners of Works; also "such powers and duties of any Government department as are conferred by, or in pursuance of, any statute, and appear to Her Majesty to relate to agriculture or forestry, and to be of an administrative character." The Board of Agriculture is also "to undertake the inspection of, and report on, any schools which are not public elementary schools, and in which technical instruction, practical or scientific, is given in any matter connected with agriculture or forestry; and the aiding of any school which admits such inspection, and in the judgment of the Board is qualified to receive such aid, and the aiding of any system of lectures or instructions connected with agriculture or forestry, and the inspection of, and reporting on, any examinations in agriculture or forestry." The Board of Agriculture "may also make or aid in making such inquiries, experiments, and research, and collect, or aid in collecting, such information as they may think important for the purpose of promoting agriculture or forestry" and horticulture.

The first report of the Veterinary Department of the Board of Agriculture augurs well for the work of the future. In those sections in which the work has been taken over in an organised condition, the results recorded are remarkably good. The maps in the assistant inspector's report are evidence of the utility of the modern graphic methods of representation, and the tables of statistics are most admirably arranged. It may, however, be hoped that within the next few years there may be a largely increased number of meritorious papers. Then, and not till then, can the report of the Veterinary Department be considered to be of equal importance to the supplements of the Medical Officer of Health of the Local Government Board, which year by year is increasing its claims to be placed in the position of a scientific work of first rate importance.

THE subject of Biology was well represented at the meeting of the British Association. The Section met under the presidency of Professor A. MILNES MARSHALL, who delivered the opening address, whilst Professor MARSHALL WARD gave an interesting lecture on the importance of botany as a means of education, and the subsidiary department of Anthropology was presided over by Professor F. W. RUDLER, the chief subject of discussion being the Antiquity of Man. Professor MILNES MARSHALL'S address was devoted to the consideration of the value of embryology, and in the course of it he dwelt on its great importance, and the absorbing interest it possessed—an interest which threatens to do harm by diverting the attention of naturalists from other and equally important branches. Not only are the actual facts and phenomena of embryology exceedingly interesting, as showing how the young animal is gradually moulded and fashioned into the adult, its several tissues being gradually differentiated from a material common to all, but many collateral lines of investigation are opened up, as the progressive development of such an organ as the eye or brain from its simplest form to its most complex condition, and the mode in which first one and then another organ successively appears and fulfils its purpose in the process of development. But all this is of trifling moment compared with the great generalisation which tells us that the several embryological stages and the order of their occurrence are no chance phenomena, but are the natural consequence of the changes that have occurred in the long series of animal forms from which the existing races have descended; for the study of the ancient forms shows that their characteristic features are epitomised and swiftly passed through in the process of development, and a key is thus afforded by which we may explain many phenomena that would otherwise be destitute of signification. It is this theory, that every animal in its own development repeats the history of its ancestry or has climbed its own genealogical tree, or, as HAECKEL puts it, that ontogeny is abbreviated phylogeny, that justifies the extraordinary attention that has been of late years bestowed upon embryology. Professor MARSHALL pointed out that whilst natural selection explains the preservation of useful variations, it does not account for the formation and perpetuation of useless organs. Recapitulation, on the other hand, solves the problem at once by showing that those organs, though now useless, must have been of functional value to the ancestors of their present possessors, and that their appearance in the ontogeny of existing forms is due to repetition of ancestral characters. Man himself presents many such features, and the existence of ear muscles in the adult that he cannot use, of gill clefts in the embryo that never possess functional importance, furnish suggestions of past history that are identical in the lesson they give with that which the linguist finds in the retention of a silent consonant in such a word as "doubt" or "answer." Nor should the principle of degeneration be overlooked, for there is reason to believe, as DOHRN and LANKESTER have shown, that it is of not infrequent occurrence. Natural selection, though consistent with, and capable of, leading to steady upward progress and improvement, by no means involves such progress as a necessary consequence. All it says is that those animals which were most in harmony with their environment would in each generation have the best chance of survival; but the survival of an ideally inferior form is very possible. To animals living in profound darkness the possession of eyes is of no advantage, and forms devoid of eyes would not merely lose nothing thereby, but would actually be gainers, as they would escape the dangers that might arise from injury to a delicate and complicated organ; whilst in extreme cases, as in animals leading a parasitic existence, the conditions of life might be consonant with the suppression of the locomotor, digestive, sensory, and other organs. There can be little question that future advances in embryology and palæontology will greatly assist our knowledge of both. There are still thousands of forms of animal life the history of whose development has still to be investigated; there are still thousands of pages of the geological record that have to be deciphered. With larger and more exact knowledge we shall understand better, though perhaps never perfectly, the manner and the stages by which the living world around us has been formed; at present it is unsafe to draw any general conclusions.

IN the discussion which was opened by Dr. PAVY at the Berlin Congress, and in the Bradshawe lecture delivered at the Royal College of Physicians in the following

week by Dr. SAUNDBY, the profession has been put in possession of the latest information regarding the treatment of diabetes and its morbid anatomy. The disease is one which is full of interest, owing in great part to the lacunæ that still exist in our knowledge of its essential nature, and also of the affection standing as a type of disorders in which the processes of nutrition are gravely deranged, and upon which, in consequence, physiological inquiry has an obvious bearing. Dr. SAUNDBY'S able exposition of the varied lesions met with post mortem in diabetics, a lecture in which he condensed the results of extended personal observation and study, is especially welcome, since it has dispelled once and for all the notion that morbid anatomy has little to teach on the matter. For, although it must be admitted that many of the lesions he described in the various organs of the body are such as could be adequately referred to the perverted nutritional processes of which the existence of glycosuria is only one indication, it cannot be denied that some of these changes may well stand in quite another relation to the disease itself. Dr. SAUNDBY himself particularised the pancreatic lesions, and the even less constant changes that have been met with in the sympathetic system as having, perhaps, a causal importance. Indeed, there are few subjects more interesting to note than the revival of the notion, advanced by LANCEREAUX, that disorder of the pancreas can induce diabetes; an opinion fortified by the experimental researches of VON MERING and MINKOWSKI, as well as by isolated cases of disease or extirpation of this organ in the human subject. At the same time it would appear that the relationship between pancreatic disease and diabetes is far from being constant. The Bradshawe lecture will be found of value in the incentive it will give to morbid anatomists to utilise their opportunities of making their records of diabetes as thorough and complete as possible, by following the lines laid down by the lecturer.

The debate at Berlin served to bring to a common point the wide experience of such eminent authorities as PAVY, DUJARDIN-BEAUMETZ, and SEEGEN upon the all-important question of the treatment of diabetes. Dr. PAVY, who opened the discussion, took the view that diabetes depends on the abnormal entrance into the general circulation of sugar derived from the ingested carbohydrates, rather than on the failure of the organism to destroy the sugar which has already gained entrance. Thus, he pointed out, the liver acts as a kind of storehouse, in which the products of carbohydrate ingestion are arrested normally, but that in diabetes this arrest does not take place, and the sugar entering the general circulation is eliminated by the urine. The phenomena of the disease are thus attributable to the waste of material which should naturally be utilised in the economy, and also to the presence in the blood of an excess of sugar. On these hypotheses he finds the *rationale* of the ordinary dietetic measures which seek to restrict the carbohydrate elements of food; but, unless the natural power of assimilation of such material can be restored, we cannot be said to cure diabetes. In opium and its derivatives, morphine and codeine, Dr. PAVY thinks we possess remedies which aid in the restoration of this assimilative power. Dr. DUJARDIN-BEAUMETZ (whose paper was read in his absence) makes no distinction between glycosuria and diabetes mellitus, for, he remarks, the latter condition itself may be but a symptom of hepatic, pancreatic, or cerebral disease. Prognosis is based on the results of dietetic treatment; the mild cases being those in which a fortnight's restricted diet expels the sugar from the urine; whilst between this class and the severe intractable cases comes a category where the sugar, although much reduced in quantity, does not wholly disappear. A complete cure is, in his opinion, rare; there always remains a glycosuric tendency. He alluded to the difficulty of making a healthy person diabetic by ingestion of large quantities of sugar, and held that the nervous system had much to do with the initiation of the disorder. The essential thing in treatment is the regulation of diet, and the entire replacement of carbohydrates by fatty foods. He thought that a good and pleasant diabetic "bread" was still a desideratum, pointing out that "gluten breads" contain a considerable quantity of starch. Indeed, potatoes, which have only 8·5 per cent. of carbohydrate, are preferable to gluten bread, which contains as much as 20 to 30 per cent. He forbids fruit, milk, and alcohol, but allows tea, coffee, maté, or kola. The use of saccharin was mentioned as a decided gain. Dr. DUJARDIN-BEAUMETZ also dwelt on the value of gymnastic exercises and hydro-therapeutics, and the use of alkaline mineral waters; whilst for drugs he favours lithia, arsenic, quinine, bromide of potassium, and antipyrin.

Professor SEEGEN entered at somewhat greater length into the physiology of diabetes, pointing out that sugar is formed in the liver, but not, as BERNARD taught, directly from glycogen, the destiny of which is to be converted into fat, and thus possibly to act as a reserve for sugar formation. For he holds that the liver can form sugar from albuminoids and fats, and that in health this sugar is utilised in the tissues in the production of heat and energy. Distinguishing two forms of diabetes, the mild and the severe, Professor SEEGEN thinks that in the former the sugar is derived directly from ingested carbohydrates, owing to the failure of the liver cells to transform them into glycogen; but that in the severe forms sugar may still be formed, although no carbohydrates are taken; its retention in the blood is then due to a failure in tissue metabolism generally. In either case—although the duration of the disorder is so widely different—there can never be a *real* cure "in the sense that the patient may partake with impunity, as may the healthy, of an excess of starchy foods." He concurs with all other authorities in placing the dietetic treatment in the front rank; but is by no means so rigid in his prescription as most, for he finds that an absolute meat diet is not well tolerated, and cannot be enforced. The diet must therefore be such as will be agreeable to the patient, since he has practically to subsist on it all his days. There is no indication for giving him more meat than a healthy individual requires, and a small quantity (40 to 60 grms.) of bread may be allowed; besides green vegetables and acid fruits in moderation. Like Dr. DUJARDIN-BEAUMETZ, he spoke against gluten bread being considered as free from starch; if given at all, it should be in restricted quantity. The alkaline mineral waters, as Carlsbad, Vichy, and Neuenahr, seem to increase the tolerance for carbohydrate food; but

Professor SEEGEN uttered a warning against encouraging people to travel far to health-resorts, as the fatigue involved is most injurious to diabetics. Many other points of practical importance were touched upon in his address.

Dr. LEPINE also spoke, referring particularly to his repetition of the experiments on extirpation of the pancreas by VON MERING and MINKOWSKI, and attributing the production of glycosuria thereby to the absence of a sugar-destroying ferment formed in the pancreas. Professor CANTANI said that in the "alimentary diabetes" so common in Italy, the restriction of diet to fats and proteids was most useful, but it had less value in cases of neurogenic origin. He only regarded these cases as *cured* when the urine remained free from sugar, in spite of the ingestion of considerable amounts of carbohydrates; and although in many such cases, in the course of years, the diabetes again appeared, he looked upon such reappearance as a fresh attack of the disorder and not as a relapse. Opium he regarded as harmful.

The above views, which we are entitled to take as representing the present position of therapeutics in this grave disease, are, it must be confessed, not very different in character, and certainly not more hopeful in outlook, than the principles of treatment laid down long ago by PROUT and BOUCHARDAT. Diabetes, which leads to such marked and serious changes in the tissues of the body, is still one of the most obscure of diseases; and also, it must be confessed, one of the most intractable. But happily its course may, to a certain extent, be controlled by measures, of the nature of which there is no difference of opinion; and although it is, as Professor SEEGEN truly said, often injurious to the patient to speak as if the malady were curable, since it lulls him into a false security, much can be done to alleviate his symptoms,—and in many cases probably to distinctly control the morbid process,—even although it be impossible to entirely restore the natural conditions under which the nutrition of the body goes on in a state of health.

THAT floods follow the reckless destruction of forests, that they diminish in frequency and in volume when replanting has restored the atmospheric equilibrium, are facts acknowledged nowhere more frankly than in Austro-Hungary and Italy, where the annual "Ueberschwemmung" or "fiumana" has long been traced to improvident tree-felling, and where legislative enactment in the reafforesting of districts is tardily checking the evil at its source. An example of how the bane is produced and how it yields to the proper antidote is furnished by Savoy and Nice—a region visited annually with inundations of increasing intensity till 1861, when it was ceded to the Emperor NAPOLEON, who forthwith began to restore the woods of which its hillsides had been stripped, and succeeded so well that its present equipoise between rainfall and evaporation renders drought or flood alike a rare and exceptional phenomenon.

The value of the forest in preventing such frightful atmospheric vicissitudes as the sudden and prolonged downpours which periodically bring ruin and death to the riversides of Austria, Hungary, and Italy is not its only title to the consideration of State Medicine. It has a hygienic importance of its own, not only for the air we breathe, but for the soil on which we live. This was admirably set forth at the International Congress just closed at Vienna on the Land and Forest in their Economic Bearings, where Professor EBERMAYER of Munich read a carefully thought-out and lucidly-expressed paper on the "Hygienic Worth of Woods." He declines to endorse the traditional induction that the atmosphere of the forest has proportionally more oxygen and less carbon than that of the treeless plain. His long and patient researches failed to elicit confirmation of this theory, finding as he did that, comparatively speaking, the wooded area was not more rich in oxygen than the non-wooded. Planting the thoroughfares of great cities with trees effects, he maintains, no chemical improvement in the air, but it has a most beneficial result on the soil. Vegetable growth prevents the evolution of noxious gases, and wherever trees are grouped together in considerable quantity, there we find bacterial development minimised. MIQUEL, for instance, observed that the air in the centre of Paris contains, on an average, 3910 bacteria per cubic metre, while the air in the parks of that city contains, on an average, only 425. Trees, moreover, act as barriers against trying winds and air currents, the careful planting of special spots having made residence possible where formerly none but the robust could live. In populous cities they intercept and detain in their foliage the grosser particles—as of soot and street dust—which are apt to load the air. Not only so, but they shade the soil; they make and keep it cool; they afford a grateful shelter in summer; and their verdure soothes like an eye-douche.

But, away from towns and cities, the forest region has a hygienic value peculiar to itself. Its atmosphere, relatively richer in ozone than that of the unwooded plain, has a neutralising power over septic gases, and its influence on the neurotic patient is found by physicians to be favourable precisely from this property. On jaded systems, enfeebled by brain-fag, the air, the scenery, the stillness of the forest have—not less than the ocean, with its silent highways—a sedative while greatly exhilarating virtue. Who has not experienced, says Professor EBERMAYER, a tranquillising yet exalting impression in the dome-shaped forest canopy, with its stem-like pillars, its glades stretching down in the form of cathedral aisles, its hundredfold gradations of green flecked with light and shadow, its solemn quietude, like that of some religious sanctuary? Who has not felt his spirits soothed, his emotions tempered, his sentiments ennobled, in such an atmosphere and in such a scene? The first beginnings of psychical disturbance, he maintains, have been effectively becalmed by moving the patient to the vicinity of these asylums of nature; nor can we forget what BYRON gained from "Ravenna's immemorial wood," or MILTON from the forest scenes he has transferred to "Comus."

The soil of the woodland is, hygienically considered, far superior to that of the tilled field. The processes of agriculture, with their artificial and natural dressings, almost equally with the accompaniments of aggregate life in cities, convert rural and urban localities into bacterial preserves. NICOLAIER in 1885 found in the upper strata of the soil of Gottingen a bacillus-swarming earth, which, introduced hypo-

dermically into mice, hedgehogs, and puppies, was followed by the characteristic tetanus, with fatal results. Fungi of every kind, Professor EBERMAYER holds, are more congenial to the treeless plain than to the woodland, all the virtues of which latter are due to the soil purification induced by vegetable growth. It is this effect on the ground occupied by cities that makes urban plantation so healthful an adjunct; not, as he repeatedly affirms, from the chemical changes that trees effect in the atmosphere. In proof of this he invoked the testimony of VON PETTENKOFER, who found that in the cholera districts of Bengal the soldiers encamped in the Mango woodland remained untouched by the epidemic which raged fiercely in the open; and that in America the fugitives from yellow fever who took refuge in the needle-forests escaped all touch of the disease. Into the relations of woods to malaria he forebore to enter, reserving the subject for another occasion. Meanwhile, he concluded his memoir with an emphatic exhortation to the Governments of Central Europe in particular: "Protect your forests, that thereby you may protect yourselves."

Annotations.

"Ne quid nimis."

TRADES UNION VITAL STATISTICS.

THE health aspect of the present agitation among trades unions for reduction of the hours of labour is one deserving of much more attention than it has hitherto received. The subject is, however, a very complicated one, and is one which cannot be dealt with in the random manner affected by some of the speakers who are now constantly addressing the labouring classes in the interests of the various labour unions. Mr. Ben Tillett recently stated in an address in support of a new branch of the Dock, Wharf, Riverside, and General Labourers' Union, that "workmen worked too long and too hard, which was attested by the fact that the average age at which they died was between twenty-nine and thirty years; whereas the well-to-do classes lived on the average to be fifty-five and sixty years." On the same day a speaker at a meeting of the Shop Assistants' Union stated that "the average worker died at twenty-eight years of age, while the employer lived to fifty-five years." These so-called facts undoubtedly appeal very strongly to the feelings of the unionist labourers, many of whom are undoubtedly overworked. It is well, however, to point out that such crude and random statements give an utterly fallacious measure of the relative longevity of the classes who relatively work with their hands and their brains. It is not probably erroneous to conclude that the mean age at death of the working classes is derived from the ages of deceased members of certain trades unions or friendly societies. In such a case the mean age at death of the members depends mainly upon the ages of the living members; certainly far more than upon the conditions under which they live and the duration of their daily labour. If the societies which supplied these statistics consist mainly of young men, as is probably the case, the mean age of the deceased members is bound to be low. On the other hand, the well-to-do classes consist largely of persons well past middle life, and therefore their mean age at death is comparatively high. This old fallacy of drawing inferences of health and longevity from the mean age at death, without regard to the ages of the living, is perennial in its vitality. The late Dr. Farr, writing on the subject more than fifty years ago, pointed out some of the absurdities which this method involved. He showed that the mean age at death of cornets and ensigns was less than half the mean age of general officers; also that curates died much younger than bishops. He pointed out that from these facts it might be fallaciously argued that the health of cornets, ensigns, and curates was much less satisfactory than that of general officers and bishops. The true rate of mortality among the labouring classes is undoubtedly higher than that among the middle and upper classes, but the mean ages at death quoted by the trades union speakers give no sort of indication of the relative mortality of the different classes. It may be hoped that ere long much valuable information concerning the vital statistics of English friendly societies may be issued by the actuary attached to the office of the Chief Registrar of Friendly Societies.

ANTIQUITY OF MAN.

CONSIDERING that the Section of Anthropology in the meetings of the British Association is scarcely more than twenty years old, it must be admitted that it has proved itself a vigorous offshoot of the great tree of biological knowledge. The special interest that attaches to all questions dealing with the present and past condition of the human race is felt by the layman as strongly almost as by the scientist, and there are few who have not of late years pondered over the primitive condition of the ancestors from which we are descended. Professor Rudler, in his opening address, observed that of late years there has been little cavil in accepting as a recognised fact that both on the continent of Europe and in these islands man existed during the quarternary period, and was contemporary of the mammoth and hairy rhinoceros and of other animals, several of which are either entirely or locally extinct. More recently others have sought to establish his existence in far earlier tertiary times, the evidence on which they rely being the presumed discovery of parts of the human skeleton; the existence of animal bones, said to have been cut and worked by the hand of man; and, lastly, the discovery of flints, thought to be artificially fashioned. After consideration of each of these links in the chain of evidence, Professor Rudler feels himself compelled to reply, "Not proven," his reasons being that the tertiary period, with its three divisions, known as the eocene, miocene, and pliocene, included a vast period of time, and were marked by great changes in the forms of life. So that of the vertebrate land animals of the eocene no one has survived to the present time, whilst of the pliocene but one—the hippopotamus—remains unmodified. The chances that man, as at present constituted, should also be a survivor from that period seem remote, and against the species Homo sapiens having existed in miocene times almost incalculable. The origin and home of the Aryan family are of still greater interest. That the cradle of this family was in the highlands of Central Asia is no longer generally admitted. The Germans contend that the primitive Aryans were the blue-eyed dolicephalic race, of which the Scandinavians and North Germans are typical examples, whilst the French are in favour of the view that the dark-haired brachycephalic race of Gauls, now well represented in the Auvergne, is that of the primitive Aryan. Some help may be derived from the comparative study of languages and grammar, but Professor Rudler thinks too much stress must not be placed on linguistic palæontology, but admits that much information may be obtained by a careful examination of the admirable collections of prehistoric ages in the great museums of Europe, as well as from those illustrating the manners and customs of existing tribes. At present no positive statement in regard to the antiquity of the human race can be given.

CERTIFICATES OF STILL-BIRTH.

IT is somewhat remarkable that medical practitioners are not furnished with printed forms of certificates of still-birth. Previously to the amended Registration Act of 1874 such certificates were not legally requisite, and it was optional to give or withhold them. But in the Act just mentioned new clauses were introduced dealing with the burial of the bodies of still-births, and it was there enacted that no infant's body should be buried as that of a still-born infant unless there was handed in to the official in charge of the burial ground a medical certificate of still-birth from the practitioner who had been in attendance at the birth, from a medical practitioner who had examined the body, a burial order from the coroner if an inquest had been held, or a declaration from one of certain persons specified in the Act as competent to make such that the child was still-born. A very large proportion of all the bodies now buried as those of still-births have been delivered by medical practitioners, who are called upon to certify to the still-birth, and the certificate thus furnished is a very important and valuable document to all concerned. It is valuable to the parents of the child, since it spares them much annoyance—possibly saves them from an inquest; it is important to the cemetery officials, since it is a guarantee that there has been no unfair play, and that the body may be safely buried. As these certificates are not required for registration purposes, it is not incumbent on the Registrar-General to provide printed forms. Nor can it be said to be the duty of cemetery officials to provide them. It is another illustration of everybody's business being nobody's business. To many practitioners who have a large obstetric practice, and to the resident surgeons of lying-in charities and workhouses, such forms would be a great convenience, saving time, and enabling the certifier to give all the requisite information in a compact form. Perhaps the deficiency may be sooner or later supplied by the Local Government Board or the Home Office. Meantime, it might be worth the while of some enterprising medical publisher to issue some forms with counterfoils, and we would suggest the following one as a specimen:—

I hereby certify that I delivered ————, the wife of ————, residing at ————, of a stillborn ———— infant, on the —— day of ———, 189 .

Signature ————
Med. Qualifications ————

"BRADYCARDIA," OR SLOW ACTION OF THE HEART.

THE cases hitherto recorded of "slow heart" and the inferences derived from them are not altogether satisfactory, as many errors have arisen owing to the pulse having been only taken at the wrist and not compared with the apex beat. E. Riegel[1] has made observations on 1047 patients whose hearts beat less than sixty times per minute. Such a condition he terms "bradycardia." He divides his cases into two large groups: 1. Physiological bradycardia. By this Riegel understands a slowing of the heart's action, caused by, or in connexion with, some physiological condition. Under this head would come the "slow heart" occurring in puerperal states, also that which is found in cases of starvation, and finally the bradycardia which is sometimes observed as a constitutional peculiarity. Riegel here remarks that many of the cases of this kind which have been reported are greatly open to question, as some of them were obviously due to some pathological cause. 2. Pathological bradycardia. There are several varieties under this head: (*a*) The slowing of the pulse noticed in convalescence from a febrile affection. More than a quarter of the whole number of cases were of this kind. They were most commonly observed after recovery from croupous pneumonia; then, in order of frequency, after typhoid, erysipelas, and acute rheumatism. Traube attributed this phenomenon to a state of general exhaustion. (*b*) Bradycardia in diseases of the digestive tract. In this division were 379 cases. It was most frequently noticed in affections of the stomach (ulcer, carcinoma, and dilatation). Such a result might have been inferred from physiological experiments; for in animals an increase of arterial tension with diminution in frequency of the pulse takes place when the stomach is submitted to electric, mechanical, or thermic excitation, and is caused by a reflex action of the vagus. The slow pulse of icterus probably depends on the paralysing action on the cardiac ganglia by the bile acids in the blood. When occurring in cases of peritonitis, the bradycardia is probably of the nature of those cases described in the first division. 3. Bradycardia in diseases of the respiratory organs. In this class were 87 cases. Some of them were during convalescence from pleurisy; others after hæmoptysis, or after the withdrawal of a large pleural exudation. 4. Bradycardia in cases of disorders of the circulatory organs (47 cases). This phenomenon appeared in fatty degeneration of the heart and when the coronary arteries were ossified, but it was never found as a constant symptom of any one disease of the heart; it more often occurred when the heart was flabby and insufficiently nourished. 5. Slow heart in diseases of the urinary organs (64 cases). Acute nephritis was the most common disease in which it was found; the slowing of the pulse was always accompanied by increase of arterial tension, and was often the earliest sign of the retention in the blood of the urinary constituents, thus denoting the commencement of uræmia. 6. Bradycardia as a result of poisoning. Riegel noticed it in three cases of lead poisoning and in five cases of chronic alcoholism. 7. A pulse under 60 per minute was noticed in 27 cases of anæmia and chlorosis, in 1 case of extreme anæmia after lead poisoning, and in 3 cases of diabetes. 8. Bradycardia in diseases of the nervous system (93 cases). In many of these cases it was thought to be due to reflex vagus action. In some instances of disease of the central nervous system it was probably caused by direct vagus action; in others Riegel ascribed the symptom to disturbances of the circulation and blood-pressure in the brain; and in the remaining number of cases no definite action could be distinguished. 9. Bradycardia in other diseases. Under this head were 17 cases of extreme fatigue and exhaustion, 1 case of sunstroke, 12 cases of skin diseases, and 17 of painful affections of the muscles.

[1] Centralblatt für die Medicinischen Wissenschaften, 1890, No. 34.

HEALTH IN RELATION TO WORK.

THE text of the lecture lately delivered at Brighton before the Sanitary Institute by Dr. B. W. Richardson, on the subject of Health in relation to Work, has not yet appeared, but the abstract of it has given the public journals sufficient exercise for comment, and, curiously enough, for comment that, on the whole, indicates an almost unanimous expression of acceptance favourable in kind. The cause of this is not far to seek; the lecture, simple in its method and decisive in its meaning, was free of all political partisanship. It was intended as a lecture of applied science, and applied medical science, to a great and pressing social question. In response to the vote of thanks moved to him by Sir Alexander Christison, and seconded by Mr. Law, C.E., the lecturer said: "If the ministers of health, the professors of medical science and art, do not understand the powers of the human body in regard to the mental and physical work which it can safely perform, who do know?" And the question discussed

throughout—the key-note—was, "Can a computation be made as to the full strain which the human body and mind will bear without risk to health? Has our knowledge advanced to the point when we can say to the legislator, to the employer, and to the employed, so much per day can be measured out as compatible with health and natural vitality, and no more?" Eight hours' work out of the twenty-four hours was, he urged, a fair standard; not an absolute standard, because work varies in quality, but a good average. When mere physical work was considered, Dr. Richardson held that twice the amount of involuntary work of the heart of a working adult man—i.e., about 250 foot tons per day—was a fair maximum; but when to physical work mental strain was superadded, as in the case of the engine-driver, then much less physical work and shorter hours of labour were required. This was a new thought in the study of the labour question, and led to another which has rather startled some hearers. In speaking of recreation as a means of health, Dr. Richardson condemned the Bank Holiday on account of "its crush, its shortness, its head-over heels character, and its entire dependence on the weather for pleasure or for pain." The working man, he contended, ought to have his holiday, like other persons, when he required it for his health's sake, or for his relief from the cares and worry of life. It was a doctor's argument, and, addressed to those most concerned—the working classes,—might have been misinterpreted. Fortunately, it appeared to be thoroughly understood by all, and on the part of many working men has been accepted with an approval which employers will not be slow to second. Bank Holiday as an interruption to business is as inconvenient to the community at large as it is insufficient to those for whose benefit it was specially desired; and we trust that those ministers who have the duty of framing legislative measures will be inclined to follow the ministers of health in trying to revise for the general good the periods of recreation demanded by the necessities of this too busy generation of working men of all grades and callings.

TREATMENT OF CHOLERA.

THE chief medical officer of the Spanish army has published in the *Revista de Sanidad Militar* an article on cholera, in which he indicates the treatment that is, in his opinion, most satisfactory. When cholera is epidemic all cases of diarrhœa ought to be attended to, and treated by means of large doses of subnitrate of bismuth. He would also give 30 grs. or more of subacetate of lead in 4 oz. of distilled or boiled water as an enema after each loose evacuation. In cholera no food should be given, but plenty of acidulated water (without sugar) and ice. Enemas of seltzer water and champagne are useful. Soup, milk, jelly, and toast-water are worse than useless as long as the kidneys do not act, as they only serve as culture liquids for the pathogenic microbe in the intestines. Bismuth is useful in helping the fæces to form more or less solid masses together with the septic products of the small intestine, and so retarding absorption in the large intestine. If the stage of asphyxia or general infection comes on he advises recourse, if possible, to oxygen inhalations. Failing these, or as additional methods of medication, rectal etherisation and a dose of antipyrin, administered either hypodermically or per rectum, may be tried. Other means, such as rubbing, hot-water bottles, hypodermic injections of ether, alcohol, caffeine—or of morphia when there is vomiting,—though useful, must be considered entirely subordinate to those first mentioned, of which the writer regards the inhalation of oxygen as the most valuable. In order to treat the kidney affection, which is so frequently the cause of death, warm baths and poultices must be used, and when cerebral symptoms develop ice should be applied to the head, and leeches to the mastoid processes.

COUNTY COUNCILS AND THEIR HEALTH REPORTS.

DR. GEORGE REID, medical officer of health to the Staffordshire County Council, has submitted to the Council a report which possesses distinct value, both for the information which it so usefully summarises for local purposes and as a type of the material which such a report may properly embody. The county contains fifty-seven sanitary districts, of which thirty-five are urban and twenty-two rural. From a statistical point of view these districts are dealt with separately and collectively, and in certain instances, where conditions of disease can be conveniently contrasted, comparison is made between the rates from certain special mortalities. In this way, for example, the influence of moisture on phthisis and the general effect of overcrowded and insanitary houses are set out, care being taken to refer to the material which has been submitted by local health officers in their several reports, and which has served for the comparisons made. At the same time, a caution is very properly issued as to basing too much on mere death-rates in the case of small or comparatively small populations, and especially when short periods are in question. The condition of the county and of its component sanitary areas, as regards such matters as the pollution of streams, water-supply, drainage, prevalence of zymotic diseases, &c., is also set out, and in a tabular form the information on a number of these points, and on the existence within the districts of means of isolation, is conveniently contrasted. Preventive measures are suggested, and some record is given of sanitary work that has been inaugurated or carried out. If year by year a volume is issued similar to the one which Dr. Reid has prepared for 1889, the series will soon constitute a valuable addition to the scientific literature of the county. In striking contrast with the Staffordshire report is a brief one signed by the chairman of the General Purposes Committee of the Somerset County Council. It compiles certain statistics as to births and deaths, taken from the several annual reports of the medical officers of health, and in a few brief words it refers to some views expressed by these officers; and then follow a few short paragraphs on impure water, imperfect drains, what are termed "malarial gases," and insanitary dwellings. Having done this, it is stated that unless necessary improvements in respect of these matters are carried out, it may become the duty of the Council to cause representations to be made to the Local Government Board under Section 19 of the Act of 1888. We imagine, however, that the central authority would want information of a very different sort to that put forth in this report before they would take any action on the initiative of the County Council. Any action taken on reports dealing with medical administration should be based on information so compiled as to show that it has been the subject of skilled medical judgment.

NURSING AGENCIES.

THE best and most popular nursing agencies are, and probably always will be, the great hospitals at which the nurses are trained; but for private agencies there is undoubted scope, and a private or coöperative agency has, from the nurse's point of view, the marked advantage over most hospitals that it permits the nurse to receive for her own benefit a much larger proportion of her earnings. It is, on the other hand, not easy for a private agency to give equal guarantees of efficiency and character

with those which active employment in hospital work imparts, or which registration would imply, and this is a consideration which will rightly and powerfully weigh both with the medical profession and with the public at large. A prospectus lies before us in which this difficulty is attempted to be met by the publication of a list of the names of the staff of the institutions represented by the prospectus, a brief description of their qualifications, training, and experience in every case being appended. The idea strikes us as a good one, and well qualified to subserve the interest, both of the nurses on the one hand and of their employers on the other.

EAR DRUMS.

HAVING recently received several inquiries as to the efficacy of artificial ear drums as a remedy for deafness, it appears advisable to say a few words on the subject. Certain specimens have been much extolled and advertised, and have in this way been recommended to the suffering public for many years. A moment's consideration will show that as a general rule they are not only useless but highly injurious, being applied by those interested without examination of the patients, who in most cases possess a membrana tympani which is already too thick and dense to admit of vibration. Artificial ear drums are useful only to those who have perforation or complete absence of membrane, and even then only a small proportion are benefited by artificial drums. Should a case really requiring some form of artificial drum come under the notice of an aural surgeon, all rigid contrivances, which are intensely irritating and injurious to the delicate mucous membrane of the tympanum, would be avoided, and a small roll of cotton or absorbent wool moistened with glycerine and water would most likely be used. It should, however, be remembered that cases suitable for artificial drums of cotton wool are always in a condition bordering on recurrent inflammation of the tympanic cavity, with all its dangerous consequences. It will thus be seen how highly important it is that applications of this kind should be made only by those who really understand such diseases. Certain much-vaunted drums are given, or rather sold, by quacks to patients suffering from all and every kind of deafness to such an extent that nearly 90 per per cent. of patients have another rigid drum placed upon a natural drum which is already too dense. Practical experience very soon convinces the victims of the danger and folly of thus tampering with Nature's delicate organisms.

A DUBLIN MAGISTRATE ON ILLEGAL DEATH CERTIFICATES.

IT is unseemly when magistrates attenuate serious offences. Mr. Byrne lately, in the southern division of the police court of Dublin, had to try a case in which the assistant (unqualified) of Dr. Maguire put that gentleman's name to the certificates of two deaths of children in one family, though he had never seen the cases. The magistrate, however, said there was only the smallest possible amount of criminality in the action of the defendant, and let him off with a fine of 1*s.* in each case. We highly disapprove of the magistrate's decision, and hope it will have the attention of authorities on law and morals.

SUCCESSFUL REMOVAL OF HYDATID TUMOUR OF THE BRAIN.

IN the *Australasian Medical Journal* for July, 1890, Dr. Graham and Mr. Grubbe record a case recently under their care in which a hydatid tumour was removed from between the dura mater and pia mater of the brain. The patient was a lad sixteen years of age, who suffered from severe headache, nausea, vertigo, double optic neuritis with atrophy, loss of memory, mental dulness, and paresis of the right arm and leg. A tumour involving the left motor area was diagnosed, and Mr. Grubbe trephined over it. He found the bone very thin, not more than $\frac{1}{8}$ in. thick, and on opening the thickened dura mater a single simple hydatid cyst was seen, and easily extracted. The pia mater was intact. The cyst measured 4 in. in diameter, and held 19 oz. of fluid. The patient recovered. After six weeks he was able to get up and walk, his memory returned, and in all respects he was well except for his blindness. Such a case as this was extremely favourable for surgical treatment, as its situation greatly facilitated exact diagnosis, and its removal was unattended with any injury to the brain itself. It is believed to be the first recorded case of the kind. Dr. Davies Thomas records three cases of recovery from cerebral hydatids, in one of which the cysts were passed through the nose and mouth; in two others they were removed through incisions in the scalp after the tumours had perforated the cranium.

THE INTERNATIONAL MEDICAL CONGRESS AT ROME IN 1893.

DR. GUIDO BACCELLI, president of the Accademia Medica of Rome, and Professor of Clinical Medicine at the Sapienza, took the chair at a recent meeting of the Società per il Bene Economico di Roma, to consider the means of ensuring the success of the International Medical Congress to be held three years hence in the Eternal City. Among the adjuncts to that Congress it was decided to form an International Exposition of Hygiene in connexion with the Sanitary Department of the programme, and, with that object, to appeal to all the leading industrial and professional centres throughout the peninsula to contribute their best and latest additions to the "Armamentarium Hygienicum," so as to place Italy at as great an advantage as possible in the inevitable contrast between her own sanitary work and that of the other Powers represented on the occasion. Florence, which has hitherto led the van in hygienic progress in Italy, has already promised her energetic coöperation; and other cities, like Turin and Milan, are expected to do likewise. Concurrently with the Medical Congress, an International Exposition of the Industries of All Nations is also being organised, so that Rome will be the busy scene of quite a gathering of the peoples, on a scale she has not yet known since she ceased to be mistress of the world. The early summer months, May or the beginning of June, or the early autumn months, the latter half of September or the beginning of October, are likely to be those selected for the Medical Congress—all risk of malaria at either time being improbable.

A MEDICAL MAN CENSURED BY A CORONER'S JURY.

A VERY painful inquiry before Mr. R. Preston, the coroner, at Tunbridge Wells, has taken place touching the death of Annie Emily Camfield from puerperal peritonitis. She was attended by a midwife on a Tuesday, and was not seen by her again till the Friday, and then only because of a message that she was ill. Three medical men were concerned in the case. The first, Mr. Thomas Connan; the second, Dr. E. A. Starling, Poor-law medical officer; the third, Mr. William Stamford. Mrs. Camfield's husband was a member of the Tunbridge Wells Benefit Societies' Medical Association. He had not been able to work for two years, and his wife maintained the family (four children) by her exertions. All his subscriptions to the Association were paid in advance. He naturally went for Mr. Connan on the Saturday, the medical officer to the club, who came and saw Mrs. Camfield, and found her in what he described as a "grave, serious, and

dangerous" condition, but refused to attend because the extra fee for a midwifery case stipulated to be paid by the rules of the Association had not been paid. Camfield then went to the relieving officer and got an order for Dr. Starling; he saw the case, but regarded it as one for the club doctor, and so retired, after writing a prescription which Camfield said he could not afford to have made up. On the Monday, his wife being in great pain, Camfield went to the chemist, but on getting home found Mr. Stamford attending his wife, at the instigation of a benevolent lady. Mr. Stamford found the patient in agonising pain and dying. He administered morphia, ice, &c., and called again in the evening. She died early on Tuesday morning. Mr. Connan, who was examined, denied any negligence, and said that the Association was not a charitable one, but one based on the principles of self-help; and if he had been disposed, as an act of charity, to attend her, he was barred by the rules. Dr. Starling expressed his regret in respect of the misapprehension as to his duties. In the end the jury, after a verdict of "Death from natural causes," expressed the opinion that the conduct of Mr. Connan merited severe censure at the hands of the coroner; they regretted that Dr. Starling was not sufficiently acquainted with his duties, and thought Mr. Stamford quite justified in withholding the certificate. We grieve to say that we cannot differ from the jury. A medical man brought, in whatever way, into the presence of a woman with acute peritonitis cannot throw on others the responsibility of his profession and of his humanity. No doubt these sick benefit associations, and the public at large for that matter, do make most inadequate provision for the remuneration of medical men dealing with infinitely worthy and pitiable cases like Mrs. Camfield's, but in the actual circumstances of her case a medical man should have befriended her.

A GRAVE NOVELTY IN LICENSING.

A GRANT of a new class of licences has taken place at Margate, in response to the application of two chemists. The applications were based on the fact that medical men, and particularly "specialists," were now in the habit of prescribing "medicated wines." One of the chemists said he did not make such wines, but they were prescribed by physicians, and could not be sold without a licence. But physicians prescribe brandy and beer. Surely chemists are not therefore to have license to sell these things pure and simple. We regard this as a new departure in licensing that may be more disastrous even than grocers' licences. Chemists are licensed to dispense drugs, not lightly veiled spirits and wine. We protest, in the name of the medical profession, against this grave innovation.

CHOLERA AND RAGS.

WE recently explained that the circumstances under which a new Cholera Order had been issued by the Local Government Board did not necessarily imply that any special risk of cholera making its way into this country was apprehended. Now a further Order has been issued, prohibiting the importation of rags into this country until at least the end of the present year. The considerations involved in this action are different from those which had to do with the issue of the previous Order. There had been, according to official returns which are admittedly incomplete, some three thousand cases of cholera in Spain between the commencement of the epidemic in May last and the end of August, and not only so, but the same returns showed that there had been a substantial increase in the number of fresh attacks during the last week to which the returns related. Now, this means the attacks have been at least double the number of deaths, and we know that a large majority of them have occurred amongst the poor, whose linen and other similar articles would not be worth preserving as articles of dress, and would in consequence tend to find their way to the rag-dealer's. For some time these "rags" would be allowed to accumulate locally in the towns and villages of Spain. They would then fall into the hands of wholesale rag-dealers; and at a still later stage they would be collected in bulk for use in the manufacture of paper. Thousands of tons of such "rags" annually reach this country from the continent of Europe, and are regularly used for this purpose; and the Local Government Board, doubtless acting on definite information to which they have access, have come to the conclusion that the time has now arrived when exportation of such rags from Spain is likely to commence; and they have decided that in the interests of public health they shall not be imported into England and Wales. Rags, whether in the form of articles of clothing or not, must be regarded as capable of conveying infection; they have done so again and again in the case of small-pox, typhus, diphtheria, enteric fever, &c.; and instances are also on record in which local outbreaks of cholera have been attributed to the same cause. In regard to the degree of risk from such a source, small-pox and typhus must take precedence, and cholera would probably be best placed at the other extreme of the scale. But for all this there is sufficient to warrant the belief that a real risk is run in connexion with clothing, and especially with linen which has been used by cholera patients; and although the experience of Koch as to the facility with which the comma bacillus multiplies when having moist linen as a soil for its development may not, in the present state of our knowledge with regard to the etiology of cholera, be a conclusive ground for action in this direction, yet, even taken alone, it may fairly justify certain prohibitive action with regard to the trade in cholera rags, unless it could be shown that such action was really unnecessary. France and Portugal will certainly not let infected Spanish rags across their frontiers, and although we have no wish to imitate other nations in such restrictive measures against cholera as are based neither on reason nor science, we have substantial grounds for believing with them that in the case of rags there is an element of danger which it is right to meet with a view to prevent the importation of infection from abroad.

THE LONDON HOSPITAL NURSES.

THE governors of the London Hospital at their quarterly meeting held last week adopted a report embodying a vote of confidence in the matron of the Hospital passed in view of the complaints made before the House of Lords Committee concerning the nursing arrangements of the institution. Some notice it was obviously necessary to take, and it does not occur to us that the managers could well have suggested any other course than the adoption of some such resolution as that which they did propose. But the proposal certainly gave to those who have led the attack an opportunity of saying with great force that until the evidence is published any declaration of opinion by the governors as a body is premature. In point of fact we do not suppose that the verbatim evidence will greatly enlighten anybody who is sufficiently interested in the discussion to have followed the inquiry, for reports which, if abridged, have been sufficiently full for this purpose have from time to time appeared in the daily papers. It is, nevertheless, perfectly true that the matter cannot be thoroughly threshed out until such time as the points made on one side and the other can be established or confuted, as the case may be, by chapter and verse reference to the authentic report of the Committee's proceedings. In these

circumstances the controversy must of necessity remain open for the present, whatever resolutions may be adopted or sentiments expressed; and this being so, we trust that on both sides it will be felt that moderation, certainly of language and as far as possible of feeling, should be studiously observed by the parties to the dispute. We cannot refrain in this connexion from expressing our regret that some among the representatives of the hospital have denounced the attack upon the present system as "an organised opposition to the work of the hospital." These are "grievous words," which "stir up anger." They convey a very odious charge, and one which it is seldom possible to establish to the satisfaction of impartial judges. Moreover, it is certain that the complaining nurses have suffered hardships. How far the hardships complained of are necessarily incidental to a nurse's lot, as some hardships undoubtedly are, and how far they are capable of being remedied by an improved system, we do not now pause to inquire. It is admitted that in the matter of their annual holiday the case of the London Hospital nurses is one for consideration, and the report which we recently published by our own commissioner shows that in respect at least of their hours of labour, the nurses of the metropolitan hospitals—without distinction of any one in particular—are habitually overworked. Such facts being incontestable, the public will refuse, and will rightly refuse, to put down to malicious or corrupt motive a movement for which there is so much matter of substance to be alleged, even if it should eventually be shown that the exponents of the nurses' view have somewhat over-stated their case. We trust, therefore, that the managers of the London Hospital will accept a suggestion which we make, certainly in no spirit of censoriousness or ill-will, and be content in the further course of this discussion to assume—what for our own part we firmly believe—that, in the main at least, the complaints which have been made have been made *bonâ fide*, and under a sense of hardship, which, whether perfectly reasonable or not, is at least worthy of being fully respected and considerately recognised.

THE NUCLEI OF BILIARY CALCULI.

ACCORDING to Dr. Naunyn of Strasburg, biliary calculi, though they appear to have gathered round a cholesterin nucleus, do not arise primarily from masses of this substance, but from some soft matter shed by the walls of the biliary passages, which becomes impregnated with cholesterin, not so much from the bile, perhaps, as from the catarrhal secretion of the mucous membrane of the biliary passages.

CHOLERA INTELLIGENCE.

THERE is again but little connected news as to cholera from Spain, but the absence of specific information has more than once been followed by news as to an increase in the epidemic, and hence no satisfactory conclusion can be drawn from the mere absence of official intelligence as to the number of fresh cases and deaths. During the past week it was announced that cholera had appeared at Medina Sidonia, not far from Gibraltar, but this was denied a few days afterwards. Two suspicious attacks were also reported from Cadiz. In the province of Valencia, which has all along been a principal seat of the disease, some abatement is stated to have taken place, but in the city of Valencia the reverse is evidently the case; and on the 9th and 10th inst. thirty-seven fresh attacks and eighteen deaths were recorded within the city limits. With regard to the general state of Spain as to cholera, Dr. Proust, in reporting on the 7th inst. to the Consultative Hygienic Committee of France, announced that the disease was still spreading in Spain, but that the health of France remained unaffected by it. Up to the present date there is no evidence that cholera has been spread by pilgrims returning to either Egypt or Europe from the holy places in Arabia, all the attacks and deaths occurring amongst those who were on the homeward journey having been limited to Arabian ports on the Egyptian quarantine stations. Amongst the pieces of news as to restrictions which are carried out one savours of stringency; it relates to the Holy Carpet which, on its way from Mecca to Cairo, will be subjected to fifteen days' "observation," disinfection being, we assume, a process that could not be contemplated. Another has caused much local excitement on account of its glaring laxity, for the chief organiser of the quarantine restrictions is reported to have visited the stations, and even to have shaken hands with the doctors there, and yet to have returned to the mainland without submitting himself to any process of "observation" or other restriction. This latter story gives some notion as to the real estimate set upon these restrictions by those who organise and enforce them.

FOREIGN UNIVERSITY INTELLIGENCE.

Berlin.—Dr. Ehrlich has been appointed Extraordinary Professor of Medicine.

Florence.—Dr. Chiarugi has been appointed Extraordinary Professor of Anatomy.

Genoa.—Dr. Canalis has been appointed Extraordinary Professor of Hygiene.

Halle.—Dr. Kromayer has qualified as *Privat-docent* in Dermatology.

Liége.—A Clinic for Mental Diseases has just been established under the charge of Professor Zavier Francotte.

Marburg.—Dr. Uhthoff of Berlin has been appointed to succeed Dr. Schmidt-Rimpler as Professor of Ophthalmology.

Naples.—Dr. Bianchi has been appointed Extraordinary Professor of Mental Diseases.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following distinguished members of the medical profession abroad have been announced:—Dr. von Rotteck, Professor of Internal Medicine in the University of Freiburg (Baden); Dr. Golitsinski, Chief Medical Officer of the Moscow Foundling Hospital; Dr. Pincus, Extraordinary Professor of Hygiene and Forensic Medicine in the University of Königsberg; Dr. Garimond, Professor of Midwifery and Gynæcology in Montpellier; Dr. Craninex, Emeritus Professor of Medicine in Louvain; Dr. Lebeau, Surgeon to the Hôpital des Anglais, Liége; Don Martin Gómez Herrero, Corresponding Member of the Royal Academy of Medicine of Madrid, and late Dean of the Municipal Board of Segovia; Dr. Esteban Sanchez Ocaña, *doyen* of the Royal Physicians and Surgeons, and Professor of Clinical Medicine in the University of Madrid.

IT has been proposed to increase largely the number of State foundling establishments in Russia, so that there should be an institution of this kind in most of the provincial centres, supported by local taxation. One objection that has been raised is the difficulty of providing funds in this way, and another is the high rate of mortality of the children in the two existing establishments in St. Petersburg and Moscow, which appears to average about 75 per cent.

THE introductory address at the Owens College will be given by Sir T. Spencer Wells, Bart., F.R.C.S., on Oct. 1st, at 4 P.M., in the Chemistry Lecture Theatre of the College.

THE Third Italian Congress of Internal Medicine will be held in Rome on Oct. 20th, 21st, 22nd, and 23rd. The Committee, presided over by Dr. Baccelli, and composed of Professors Cantani, Murri, Maragliano, and Rossoni, have decided that the following shall be the topics of special discussion:—1. The Etiology and Treatment of Pleurisy. 2. The Pathology of the Blood. 3. The Varieties of Polyneuritis.

THE "Year-book of Pharmacy," which is again edited by Mr. Louis Siebold, F.I.C., F.C.S., will contain full accounts of the papers read at the British Pharmaceutical Conference, with notes of the discussion. The meeting of the Conference is to be held next year at Cardiff.

DR. MARSTON and Mr. FREDERICK, secretary of the Army Sanitation Committee, who have been directed to visit the barracks at Edinburgh and Glasgow, and subject them to a sanitary examination, began with Edinburgh Castle on Thursday last.

THE INTERNATIONAL MEDICAL CONGRESS IN BERLIN.

(FROM OUR SPECIAL CORRESPONDENT.)

BESIDES the discussion on certain subjects which I sketched in my last letter, numerous papers were read in the Section of Neurology. Some of these, which interest chiefly the alienist, I may pass over. Of those of more general interest I may mention the following:—Indications of Hypnotic Suggestions for the Treatment of Nervous Diseases, by Dr. Berillon (Paris). The author has treated within the last eighteen months 360 patients with hypnotism only. Of these, 265 were females, 50 males, and 45 children. The different affections for which this treatment was adopted he divides into five groups:—1. Neuroses, including 155 cases of hysteria, 15 of chorea, 5 of paralysis agitans, 25 of epilepsy, and 3 of nocturnal somnambulism. The cases of hysteria have yielded very satisfactory results; the chorea cases required a more prolonged treatment; not one of the cases of paralysis agitans was cured, but the movements were arrested during the hypnotic sleep; 4 of the epileptic cases were cured, while in 6 othera there was only a temporary diminution of the attacks; the 3 cases of nocturnal somnambulism were cured. 2. Organic affections of the nervous system. Cases of hemiplegia and paraplegia of old standing have been much improved by hypnotism, also cases of locomotor ataxy, in some of which the insomnia and the lightning-like pains improved, and in one there was a notable improvement in the eyesight. 3. Neurasthenia. Ten cases of severe neurasthenia were cured, and in many cases of neuralgia, such as migrain, toothache, sciatica, gastralgia, hypnotic suggestion proved very efficacious. 4. Mental diseases. In melancholia, sitiaphobia (solid and liquid food had been refused for twenty-three days in 1 case), good results were obtained; also 3 cases of dipsomania, 5 cases of morphiomania, and cases of chronic mania of various types yielded to the treatment. Cases of acute mania (3 in number) proved refractory. 5. Nervous diseases of children. The treatment was tried with complete success in nocturnal incontinence of urine (22 cases), incontinence of fæces (2 cases), blepharospasm (2 cases), chorea (12 cases), onanism (4 cases), and stammering (3 cases).—In the discussion which followed, the author's conclusions were adversely criticised by Prof. Mierzejewsky (St. Petersburg), who had never found any good results from the application of hypnotism in mental disease or cases of grave hysteria.—Dr. Ladame (Geneva) could only cite one case of dipsomania where hypnotism did any good.—Dr. Magalhaes Lemos (Porto) read a paper on Sensory Epilepsy and General Paralysis. Charcot, in his "Leçons du Mardi," drew attention to certain sensory disturbances of very temporary nature, associated with ophthalmic migraine, which corresponded in their distribution to partial, or Jacksonian, epilepsy. The symptoms consist of numbness, commencing in the hand, spreading up the arm, then invading part of the face, and afterwards descending into the leg of the same side. These sensory troubles are often associated with psychical and motor phenomena. According to the author, this partial sensory epilepsy may be the first symptoms observed in general paralysis; he gives ten observations in support of his opinion, and draws attention to the diagnostic importance of this symptom.—Dr. Thyssen (Paris) read a paper on Askasia-abasia. This peculiar train of symptoms, consisting in the inability to stand or inability to walk, without there being any paralysis, was first described by Charcot and his pupil Blocq, as occurring in hysteria. More recently Binswanger described some cases of insanity in which these symptoms occurred. According to the author, this affection may occur in children as well as adults; hereditary nervous predispositions are often noticed. It may occur in paroxysms or it may be a permanent symptom, and may then assume either a paraplegic, ataxic, trembling, choreic, or saltatory form.—Dr. Monakow (Zurich) read a paper, with demonstration of preparations, on the Pathological Anatomy of Cortical Disturbances of Vision. Experiments on animals, results of which the author had already published, have shown him that extirpation of the occipital lobes, even in adult animals, produces a secondary degeneration of the external geniculate bodies, parts of the corpora quadrigemina, and optic tracts. He now gives some cases where cortical lesions in man gave rise to similar degenerations. In one case where, seven years before death, an attack of apoplexy produced complete hemianopsia, the post-mortem examination showed a focus of softening in the cuneus, lobulus lingualis, and gyrus hippocampi, the disease extending slightly into the subjacent white matter, and there was found also degeneration of the external geniculate body, changes in the pulvinar, and atrophy of the optic tract. In a second case where the hemianopsia was incomplete, and where there was alexia, the angular gyrus and præcuneus were found affected, but the cuneus was intact, and the incomplete hemianopsia is thus explained by a portion of the occipital lobe remaining unaffected. — Of the various demonstrations which were given in connexion with this section may be mentioned one by Dr. Felix Semon and Mr. V. Horsley on the relations of the larynx to the motor nervous system. This demonstration was given before the united Sections of Neurology, Physiology, and Laryngology, and the experiments were so arranged that the movements of the vocal cords projected on a screen could be easily seen by the large and appreciative audience. The paper which these experiments were intended to illustrate has appeared in the *Deutsche Medicinische Wochenschrift*, No. 31. Further demonstrations were given by Messrs. Horsley and Beevor (*a*) on Excitation of the Cortex of the Brain in an Orang outang, (*b*) on the Capsula Interna in the Monkey, and by Dr. Beevor on the Anatomy of the Cingulum and posterior part of the Corpus Callosum and the Fornix, and Professor Adamkiewicz (Cracow) exhibited a beautiful series of sections illustrating the vascularisation of the medulla oblongata.

General Pathology and Pathological Anatomy.

In a former letter I referred to the discussion on the part played by the leucocytes in inflammation. The Etiology of Tuberculosis formed another subject for discussion.

Professor Bollinger (Munich) opened the discussion, and spoke of the different portals through which the tubercle virus entered and its localisation in different organs. As the author has published a *résumé* of his address in the *Münchener Medicinische Wochenschrift*, I will only confine myself to a few of the more salient points. That the skin is but little predisposed to the reception of the tubercle bacillus is shown by the rare occurrence of cutaneous tuberculosis either in those who, like butchers, continually handle tuberculous masses, or in persons suffering from phthisis. In children the skin forms a better nidus, and the tuberculosis described in some cases following circumcision in children shows that the subcutaneous tissue is much more predisposed than the cutis. Through vaccination tuberculosis cannot be conveyed, nor can the tubercle virus penetrate through the pores of the skin. The mucous membranes adjacent to the skin have a great tendency to allow the virus to pass without they themselves becoming affected, and this is still more likely to occur if the mucous membranes are inflamed or otherwise affected, as in otitis, rhinitis, conjunctivitis, keratitis, blepharitis, and pharyngitis. The virus passes from these mucous membranes to the neighbouring lymphatic glands, and we thus get the

primary glandular tuberculosis (scrofulosis of the lymphatic glands). The lungs form the principal portals for the entrance of the virus, which in the form of dust is aspirated into the lung alveoli; the virus most probably is uniformly distributed over the different parts of the lungs; but while most of the bacilli are destroyed by the organism, those entering into the apex, owing probably to several factors, settle and develop; hence the presence of so-called healed phthisis in the apices of so many individuals. In children, especially, the tuberculous virus may pass through the lungs and become deposited, and further develop in the intra-thoracic glands, and thence may invade the lungs, the pleura, and pericardium. The lungs may also become secondarily invaded from other organs which are the seat of primary tuberculosis, as the intestinal tract, peritoneum, and subcutaneous tissue. Primary tuberculosis of the testicle, of bones and joints, is due to a latent hæmatogenic infection, the virus passing through the lungs or mucous membranes without affecting them, and then entering the blood-current. Tuberculosis of the larynx is in by far the largest majority of cases due to an auto-infection with sputum. Of the digestive tract, we find the upper part (oral cavity, pharynx, œsophagus, stomach, duodenum, and jejunum) but little predisposed to the infection, the lymph follicles of the ileum and of the large intestines much more so. Primary tuberculosis of the intestines associated with tuberculosis of the mesenteric and retro-peritoneal glands in young persons is due to infection by food; in most cases through the ingestion of raw, unboiled milk from tuberculous cows. Secondary tuberculosis of the intestines is due to an auto-infection by sputa, or may be occasionally hæmatogenic. The gastric juice has a deleterious effect on the vitality of the tubercular virus, but it is by no means satisfactorily made out that it kills outright this virus. Tuberculosis of the peritoneum, which is from three to four times more common in men than in women, is occasionally primary, much more often secondary, being continuous with a tuberculosis of the intestines or lymphatic glands, or due to hæmatogenic or lymphogenic infection. Experiments on animals have shown that the serous membranes, like the mucous membranes, may allow the virus to pass, and in intra-peritoneal inoculation the peritoneum may remain unaffected, and tuberculosis appear in other organs. The author then spoke of milk and meat from tuberculous animals as etiological factors in producing tuberculosis. As regards milk, it is ascertained beyond doubt that milk derived from cows in which the udder is diseased is eminently dangerous. Milk from tuberculous cows in which the udder is healthy is also virulent to a great degree (up to 55 per cent.). (This is according to the author's experiments.) The virulence is proportionate to the extent of the tuberculosis in the animal, and it may even occur when there is only local tuberculosis in the animal. The leucocytes most probably convey the virus to the healthy udder. As regards infection from milk of tuberculous women, we have as yet only negative evidence. The various products of milk, such as cream and butter, obtained from milk of tuberculous animals, retain the power of infection, as proved by experiments both by feeding and inoculation. Butter artificially impregnated with tuberculous virus retains its virulence for months. If milk from tuberculous cows is diluted, the virulence is much lessened. Hence milk collected from several animals is to be preferred. The contaminated milk is chiefly, then, dangerous to children and persons predisposed to tuberculosis when it forms the sole diet, when it is undiluted, and when it is consumed in the raw state. Against the virulence of the products of milk (cream, butter, and cheese) we have at present no protection. Milk forms also an important etiological item in the dissemination of tuberculosis in animals—cows, oxen, and pigs,—as the young animals are fed on milk. As regards meat from tuberculous animals, inoculation experiments have shown that meat derived from animals far advanced in tuberculosis has virulent properties, which, however, are destroyed effectively by sufficient boiling. The meat from animals in an early stage of tuberculosis gave negative results on experimentation. The author concludes from this that the danger of infection by meat is not very great, and can be entirely obviated by thorough boiling of the meat. To effectively ward off the danger from milk and meat we have to adopt general measures to diminish tuberculosis in animals, which at present prevails to an enormous extent. The author then spoke of the relation of the quantity of tubercular virus to the virulence of infection, and of the various predispositions. He distinguishes: (1) Predisposition of species (man, monkey, the bovine race, pig); (2) family predisposition (heredity, phthisical *habitus*); (3) individual predisposition (general constitutional predisposition, often acquired); (4) Predisposition of organs (lymphatic glands, spleen, serous membranes, lungs, and parts of organs, such as apex of lungs, basal meninges, and mucous membrane of larynx); (5) predisposition residing in cell elements (endothelia, wandering cells, &c.)—Professor Ponfick (Breslau) followed, and submitted the following theses:—(1) Tuberculosis, being always due to an exogenous bacillus, is at first a local disease; (2) hence its primary seat, which, however, may remain hidden, is always in those organs which are in immediate contact with the external world—namely (in the order of frequency of affection), in the respiratory tract, digestive tract, urogenital apparatus, and external skin; (3) tuberculosis affecting any other organ can only be due to an auto-infection through the lymph or blood; (4) the transition of local to general tuberculosis takes place either uniformly, as by bacillary deposits on the inner surface of the thoracic duct, or in stages, as by direct entrance of the virus into the blood current; (5) there are generalisations which run a peculiarly modified course which compel us to speak of a chronic miliary tuberculosis.—Professors Heller and Zenker took part in the discussion. The former has modified his views slightly, and is now more inclined not to disregard altogether what is called predisposition, though he explains the immunity which some have against the tubercle bacillus somewhat differently.—Dr. Bang (Copenhagen) directed his observations against the assertion of Bollinger that the milk of cows is virulent, even when the udder is healthy. The results of his experiments have already been published in the *Deutsche Zeitschrift für Thierarznei*. The milk of only two out of twenty-eight tuberculous cows with healthy udders proved infectious; in another set of experiments four were found virulent, but in three of these careful examination showed small nodules of infiltration in the udder.—In connexion with this discussion I may mention a demonstration by Dr. Jürgens on the organs of a person who had died from tuberculosis, where the omentum and the mesenteric and retro-peritoneal glands had the exact appearance of pearl disease; and a demonstration on the macroscopic and microscopic appearance of tuberculosis in reptiles and birds by Dr. Walter S. Sibley (London). The substance of this communication has already appeared in *Virchow's Archiv.*—Dr. S. Woodhead (London) demonstrated thin sections of the whole of the lung, cut with Hamilton's microtome. These sections are very useful for class demonstrations and for giving a bird's-eye view of the localisation of tuberculosis and other affections of the lungs.

The discussion on Disturbances of the Myocardium was opened by Prof. v. Recklinghausen, who referred principally to Renaut's "myocardite segmentaire." The gist of his address is contained in the following theses:—1. The dissociation of the fibres of the myocardium (Renaut's disintegration, fragmentation) occurs (*a*) in spontaneous more or less sudden death following diseases of the myocardium in consequence of closure of the coronary arteries, of heart ruptures, and rupture of the commencement of the aorta; (*b*) in paralysis of the heart associated with infectious diseases, such as typhoid, variola, sepsis, and extensive suppurations; (*c*) in nephritis and acute lesions of the nervous central organs when these diseases have a more or less sudden fatal termination; (*d*) in certain cases of death from violence. 2. The stage of agony just preceding death is sufficient to cause this dissociation of the muscle fibres. It has not been proved yet that it occurs before the agony sets in. The "myocardite segmentaire essentielle," which is said to depend on the softening of the binding substance between the muscle fibres, is as yet hypothetical. 3. When the dissociation has reached a higher degree there are noticed also transverse ruptures of the dissociated muscle cells, the longitudinal striation becomes very distinct, the nucleus becomes less distinct and stains badly, and the muscle discs appear more shining without losing the transverse striation. 4. Injuries to the heart fibres immediately after death produce similar changes in their structure, together with a hyaline degeneration. 5. The same series of changes are seen in the acute parenchymatous myocarditis of Hayem, in the partial softening of the myocardium as described by Virchow and Ziegler. Similar changes are found in the muscles of the body in

polymyositis (of which recently six cases have been described by Kussmaul and Wagner). 6. The immediate cause for these changes in the muscular fibre lies in a disorder or excess of its irritation to contraction. The mediate cause for the chronic, parenchymatous, and multiple myocarditis is anæmia, produced by obstruction of the larger branches of the coronary arteries. In the acute form, vaso-motor disturbances and spasms of the small contractile arteries may be the cause; permanent obstruction or inflammatory changes of the walls of the coronary arteries could not be found. In the (rheumatic) parenchymatous myositis also no lesion of the arteries was detected. 7. General progressive anæmia, plethora, and venous hyperæmia play no part in the production of this form of myocarditis. 8. The anatomical changes in the cardiac nerves and cardiac ganglia are too insignificant to enable one to look upon myocarditis as due to a neurotic cause.—In the absence of Professor Greenfield of Edinburgh, Professor Zenker (Erlangen) acted as co-referent in the discussion. Though he had as yet had no opportunity of studying the changes described by Renaut, he fully accepted this observer's investigations, and remarked that, while for centuries poets and the lay public speak of death from broken heart, there was now an anatomical basis for such an assertion. The author dwelt at some length on the observations made by Krehl (published since then in the last number of *Deutsches Archiv für Klinische Medicin*, p. 454), who found in persons that had died of valvular disease of the heart numerous changes in the interstitial tissues of the heart's muscles, and also within the muscular fibres and in and around the bloodvessels, which changes became evident on making serial sections, and which he looked upon as due to chronic progressive inflammations of the myocardium.—Professor Zenker pointed out the importance of these observations, but took exception to one statement made by Krehl—namely, that fatty degeneration of the myocardium is only rarely, and then not extensively, found.—The discussion was continued by Professor Köster (Bonn), who described the various appearances which myocarditis presented, and dwelt especially on the yellow spots which are so often found on the papillary muscles and posterior wall of the left ventricle, and near the septum. These yellow necrotic spots may appear as streaks or small foci, and eventually run together and form large patches. He looked upon the changes as occurring primarily within the muscular fibres, and the fibrous and interstitial deposits which form later and surround or even replace the necrotic patch as secondary and due to a reactive inflammation. Contrary, however, to the accepted views, he denied that the obstruction of the coronary arteries and their branches had anything to do with the formation of these myocarditic deposits.—Professor Weigert (Frankfort) looks upon myocarditis as proceeding from the muscle fibre and due to some injury of the muscular fibre; the fibrous changes in the interstitial tissue he regards as secondary, and not as a primary affection. So far, then, he agrees with Köster. He himself has never seen the large yellow masses to develop from a number of small isolated patches. He cannot understand that Köster was not able to find the occlusion of branches of the coronary arteries in studying myocarditis. He looks upon these patches as anæmic infarcts. Apart from the obstruction of the coronary arteries, myocarditis may be caused by excessive stretching of the muscle, as in aortic insufficiency when the muscle gets injured, and in a number of other affections, as in granular kidneys. He also alluded to the coagulation within the arteries produced by ferments, as in the experiments of Kohler, Silbermann, and others, whereby thrombi are formed in the vessel which may lead to myocarditic deposits.—Professor Chiari (Prague) entirely agreed with Weigert, and looked upon the myocarditic deposits as due to necrosis from arterial obstruction. Serial sections have often enabled him to find the obstructed vessel leading to the patch of myocarditis.—Professor Marchand (Marburg) drew attention to simple degenerative changes in the heart muscle which must not be identified with myocarditis; a slight degree of fatty degeneration is of no great moment, and the activity of the heart is thereby but little influenced. As regards the true myocarditis, he also is against Köster, and looks upon obstruction to the coronary arteries as the primary cause.—Professor Ziegler (Freiburg) is of the same opinion as the previous speakers.—Dr. H. Klein (Warsaw) has studied Renaut's "myocardite segmentaire," and found it in two cases unassociated with any other alteration in the muscular fibre.—Dr. Welsh related the results of some experiments which have clinical importance, as showing that a fatty degeneration may exist to a considerable degree without interfering seriously with the action of the heart. He was able to produce in animals extensive fatty degeneration by keeping them exposed for days to a high temperature. By using certain precautions the animals could be kept alive for a long time; in spite of the extensive fatty degeneration which he thus produced, the blood-pressure and pulse were normal, and irritation of the pneumogastric produced the same slowing of the pulse and the same change of blood-pressure as in a normal heart. Referring to the causes of myocarditis, he pointed out that purely inflammatory changes are not altogether to be neglected.—Dr. Knoll of Prague drew attention to the fact that mechanical injuries as well as chemical irritation produce in muscle a dissociation of its fibres, and that therefore Renaut's "myocardite segmentaire" may in some cases be a post-mortem phenomenon due to the rigor mortis. He further pointed out that the myocardium very easily undergoes fatty degeneration, and lighter grades can be made visible by using Fleming's solution. In cold-blooded animals starvation is often sufficient to produce marked fatty degeneration. In birds this observer succeeded in producing myocarditis by section of the pneumogastric.

In connexion with this discussion, Dr. Charrin (Paris) read an interesting paper on Experimental Myocarditis, and showed some preparations. Inoculating rabbits with pure cultivations of the bacillus pyocyaneus, he sometimes found marked hypertrophy of the left ventricle, at other times dilatation, occasionally amyloid degeneration of the heart, and in one case fatty degeneration. The hypertrophy was found in an animal which was insufficiently vaccinated and afterwards inoculated several times with virus gradually increasing in strength. The wall of the left ventricle was found very much thickened, and the microscopic changes corresponded to those seen in the heart associated with granular kidneys, and, in fact, the animal had a typical granular kidney. When the heart was found dilated, there was present marked congestion of the lungs, liver, and kidneys; and microscopic examination of the myocardium showed increase of the fibrous tissue, cell infiltration, and the presence of numerous fine bloodvessels. The experiments showed, then, that the same cause may produce various effects on the heart; and this is to be explained, inasmuch as the amount of virus injected, the length of duration of its action, its toxic products, and the constitution and resistance of the organism vary so much in the individual cases.

BRIGHTON SANITARY CONGRESS.

THE following is a continuation of our report of the proceedings of the Sanitary Congress held at Brighton.

SEWERAGE OF BRIGHTON.

Dr. Carpenter, in his opening address to the conference, said sanitary inspectors should not go with the threat of legal proceedings in their mouths. They might enforce blind obedience to the by-laws of a local authority, but the work would be done at the wrong time and in the wrong place, and not, as they were anxious it should be done, for the prevention of the spread of disease. Referring to the sanitation of Brighton, he said he thought the time was not far distant when the Legislature would think it a part of their duty to prohibit the throwing away into the sea of material absolutely necessary for the provision of the food of the people. On the downs on the north of Brighton this material would produce crops that would be five times or ten times more abundant than they were at present. This, too, could be carried out without any of those great difficulties that arose in districts where mines and minerals existed. If the sewage of the town was transferred to the surface of some of the comparatively barren hills which existed to the north and north-east of Brighton, there would be provided ten times, or even twenty times, the amount of milk now forthcoming from those particular districts. There were difficulties, but they would be overcome by a determined persistence on the part of those who had the management of local affairs. He contended that it was highly to the

advantage of the community at large that there should be such utilisation of sewage. It might not bring about that reduction of rates which was looked upon as so important, but there was something more important than the reduction of rates, and that was the reduction of the death rate and the production of food that would enable the people to be fed at fair and average prices.

A MINISTER OF HEALTH.

Mr Wilkinson, Chief Sanitary Inspector of Derby, moved: "(1) That a Government Department of Health be established, presided over by a Cabinet Minister, having supreme control over the public health. (2) That the officers now variously named sanitary inspectors and inspectors of nuisances be designated sanitary inspectors. (3) That candidates for the position of sanitary inspector be required to possess a general knowledge of the building trades, and a certificate in sanitary science. (4) That all inspectors be elected to a permanent tenure of office, and only dismissible for misconduct or proved incompetence, with right of appeal to the Local Government Board or 'Department of Health.' (5) That sanitary inspectors be required to inspect their districts for the detection of nuisances and to serve notices for the abatement thereof, all such notices to be valid if confirmed by the local authority, as if served by the authority's order. (6) That the duties of sanitary inspectors be clearly defined. (7) That in all appointments requiring an officer's whole time to be given an adequate minimum salary be prescribed. (8) That steps should be taken to form a fund for granting superannuation to inspectors."

GEOLOGY AND WATER-SUPPLY.

Mr. William Topley, F.R.S., F.G.S., took as the subject of his presidential address, "Geology in its relation to Hygiene as illustrated by the Geology of Sussex." The coast towns of Sussex, he pointed out, had an abundant supply of pure water beneath them. The upper greensand, he said, had also a very large population in proportion to its small surface area, this being due to the dryness and fertility of the soil, and to the excellent water-supply, which was easily obtained. The upper and lower divisions of the lower greensand also afforded dry sites, and water in springs was at no great depth. In the Wealden district, however, the problem of obtaining an efficient supply of water was often one of great difficulty. Attention was drawn to the fact that the population of many villages was not increasing, and that for those which had to some extent increased of late years the natural water-supply from springs, streams, and shallow wells would still suffice. But cesspools had hopelessly poisoned the wells and springs, and systematic sewerage had fouled the streams. No one well acquainted with the condition of rural England could doubt that a large part of the sanitary work of the present day consisted in merely combating the evil effects of ill-considered sanitary measures in the past. It had been inferred that consumption went along with dampness of soil. In West Sussex there were some areas difficult to interpret, but if to dampness of soil they added bleakness of situation, the distribution of consumption could be explained. Lung disease and diphtheria were prevalent on wet soils, the latter being especially common on the Weald clay.

Dr. A. W. Scathiff read a paper on a case of Well Pollution undetected by Chemical Analysis. He mentioned a case in which enteric fever was thought to have been derived from drinking the water of a well, on the water of which the public analyst reported that, though of doubtful purity, it was not, in his opinion, a safe case to take into court. Careful investigation seemed to show that the well had become contaminated by the specific enteric poison. These cases, he thought, showed that it was unsafe to trust to chemical examination of water, unless they had persuaded themselves that the source was free from pollution.

Mr. Baldwin Latham, in the course of the discussion, said that in most instances in which typhoid fever had been traced the water had passed analysis. His own opinion was that wells liable to pollution, even to the smallest extent, were to be looked upon with very great suspicion. They could trace water a long way underground, and thus discover if it went anywhere near a source of pollution. They must not trust to organic chemistry to tell them whether or not water was wholesome, but must use their own good common-sense, and take care not to drink water if near a cesspool, or any other contaminating source.

BREAD-MAKING.

Mr. Jago contributed a paper on Sanitation in Bread-making. Bread was one element in a mixed diet. "Whole meal" was rich in phosphates, but unless the bran was very finely ground a large proportion was entirely unassimilated by human digestive organs. The mixture did not possess keeping properties, and the employment of whole meal in a state of incipient decomposition would constitute a great source of danger to public health. For sanitary and economic reasons they had to fall back on bran free from flour as the most suitable article from which to make bread. The whiter and darker varieties of flour did not differ greatly in composition, but for reasons involved in the manufacturing process the very dark flours were not desirable. Further, the difference was largely a question of dirt, some varieties of wheat arriving in this country in a shockingly dirty state. One of the various justifications of fermentation was that during the process changes occurred which resulted in gluten being softened, and probably partially peptonised. Chemical and mechanical methods of aeration were devoid of this beneficent action on gluten, and, as a necessary consequence, fermented bread stood foremost in the matter of nutritive value containing flesh-formers in higher proportion, and at the same time the act of fermentation produced a characteristic delicate flavour unattainable by any other means.

THE ETIOLOGY OF DIPHTHERIA.

W. N. Thursfield, M.D., medical officer of health for the county of Shropshire, read a paper on this subject, in which he said that, although various large towns had previously appointed officers of health, it was not until after the year 1870 that the Legislature mapped out the whole country into urban and rural sanitary districts, and required each to be provided with a superintending sanitary board and responsible sanitary officers, and with this the general advance of the sanitary army may be said to have commenced. Looking over the result of the twenty years' struggle with disease which had been going on from that date, nothing was more remarkable than the contrast, as indicated in the mortality returns, between the uniform success obtained in the case of typhoid fever as contrasted with the uniform defeat in the case of diphtheria. He quoted statistics to show that this disease was increasing very much in this country. Continuing, he said: "Exactly twelve years ago, in a series of papers I contributed to THE LANCET[1] on the subject of diphtheria, I stated that diphtheria was essentially a disease of rural districts otherwise the most healthy, as indicated by the fever death-rate, and that, as regards its connexion with local conditions, the disease in question was as intimately connected with structural dampness of habitation as typhoid fever was with sewer gas. These conclusions, as is generally the case when they are contrary to accepted ideas, were severely challenged at the time by some well-known sanitarians, who maintained that typhoid fever and diphtheria were both the result of similar conditions of exposure to filth accumulation, and that the explanation of the special incidence of diphtheria upon rural districts was due to the fact that the towns had relatively made more sanitary progress than the country districts. The conclusions advocated by me at the time were, however, absolutely correct. That there is a very intimate connexion between dampness and diphtheria is now generally admitted, and as regards special incidence of the disease upon otherwise healthy rural districts the statement was absolutely correct at the time; but, as I shall subsequently show, this disease has of late years shown a considerable tendency to settle in the large towns, and this tendency is increasing." He submitted tables of statistics to show that in the ten years preceding 1880 this was a disease of the rural districts, but since that time the position had been entirely reversed, and that now the stress of the disease fell upon the large towns, and this specially held good with regard to London. The explanation was analogous with what occurred in other diseases—viz, that in a cyclical epidemic wave of diphtheria the localities where the disease was indigenous would be the first to suffer and become centres of infection. There was, he said, exceedingly strong evidence that sewers may become specifically contaminated with the diphtheritic germ, and he had seen instances of this which were almost convincing, and, as

[1] Aug. 3rd, 10th, and 17th, 1878.

Dr. Sykes had suggested, the slimy, unflushed upper portions of the sewer would form an admirable cultivation field for the diphtheritic germ. Such a specifically contaminated sewer would only need a slight escape of sewer air and the presence of individuals with congested or inflamed throats to produce diphtheria. In speaking of the origin of diphtheria the author said: "As in other infectious diseases, the majority of cases of diphtheria are traceable, clearly or inferentially, to direct infection; but in diphtheria one frequently meets with cases which have formed the starting-point of infection, and which seem to admit of no such explanation without an undue straining of facts, and a relatively considerable number of such cases have in my experience occurred in new (and consequently damp) houses, where it has been possible to eliminate the theory of the outbreak having been due to the revival of the old germs. This development, which as a rule presumably requires a considerable period of time and a long series of passages through different individuals to develop the specific disease, appears in the case of diphtheria to attain that end in a very short series under favourable conditions. In the evolution of the property of infection there is nothing discordant with what is believed to occur in some other diseases, and evolution of intensity certainly occurs in diphtheria, or, to speak more strictly in accordance with facts as they seem, the disease assumes a more virulent form after cultivation in the system of some individuals predisposed to suffer from the disease severely. Now, if we grant the above two propositions, there is certainly no difficulty in believing that the outbreaks of diphtheria may occasionally be as really autochthonous as they seem. Assuming this, the next question is, What is the starting-point in this evolution? Certainly in nearly every case in which I have felt justified in attributing an outbreak of diphtheria to evolution, I have felt certain that it was developed from sore-throats of a catarrhal nature, and apart from any influence of what are known as filth nuisances. Whether the form of sore-throats which so often results from and is attendant upon prolonged exposure to sewer-gas emanations or other depressing conditions, as hospital sore-throat &c., may, apart from specific infection, develop into infectious diphtheria is a point upon which my mind is open." He did not think that the rise and fall of the subsoil water had anything whatever to do with the disease, provided the structure and atmosphere of the house were not affected, or that occasional liability to floods in a locality at other times dry had any influence in inviting the disease; and he knew several localities, which were subject to be flooded by a rise in the river as a rule several times in the year, which were remarkably free from this disease, although the worse built and colder houses on the elevated high ground were by no means so. The diphtheria germ was one of the germs which may now be fairly said to have been isolated, identified beyond doubt, cultivated outside the living subject, and made the subject of special experiment. Speaking solely from his own personal investigations, he had never yet been able to satisfy himself or to obtain any good evidence that diphtheria had been spread by drinking contaminated water or had arisen from it, and, except as a debilitating agent predisposing to severe attacks, he had not been able to establish any connexion between diphtheria and contaminated water. After referring to the experiments on animals by Dr. Roux at the Paris Pasteur Institute, Dr. Thursfield spoke as follows: "It is my experience from the personal observation of very large numbers of cases of sore-throat, undoubtedly specific because contracted from well-marked cases of diphtheria, that adults with healthy mucous membranes as a rule suffer from the disease in so mild a degree as not necessarily to confine them to the house, and this is often the case with children; and a child attending school, with slight sore-throat, the true nature of which is unsuspected alike by parents and teachers, is, in rural districts at least, a very frequent origin of an epidemic. Diphtheria has been communicated by experimental inoculation to rabbits, guinea-pigs, pigeons, sheep, dogs, &c.; and it has been asserted that calves, fowls, &c., are very subject to the disease; but the only two animals which have, so far, been proved under ordinary conditions to have communicated the disease to man, or *vice versâ*, are cats and cows; and the remarkable point is that, as in hydrophobia, the symptoms of the disease in the animal are different from those in the human subject. The most prominent symptom of the cow is an inflammatory affection of the udder, which in its origin is generally attributed by stock-keepers to the cows having caught cold from lying on damp, cold ground when in milk. In cats the stress of the specific disease falls upon the lungs, the most prominent symptom being persistent coughing, &c. In a typical case of the kind, which I investigated some months back, of three cats, all of which subsequently died, two were taken eight days before the children, and, as they were great pets, the cats were nursed and carried about by the children, who subsequently suffered from diphtheria, one fatally. There were cases of diphtheria about a mile off, whence possibly the cats may have contracted the infection. Through the kindness of Dr. Buchanan, I was enabled to forward the body of the one cat to Dr. Klein, the eminent bacteriologist, who found post-mortem conditions coinciding with those found in cats who had been purposely inoculated with the diphtheritic poison. Although the above facts are indisputable, and great attention has rightly been attracted to the subject by extensive epidemics in towns which have been spread by milk, too much weight should not be attached to this particular source as affording a common explanation of outbreaks of diphtheria."

WORKING HOURS FOR WORKING MEN.

Dr. B. W. Richardson delivered a lecture on this subject on Saturday. He much regretted that at such congresses the working classes could not take an active part throughout with other members, and that they could not have a working man presiding over one of the Sections. But whatever might be the case in the future, this was not at present possible. Work, he proceeded to urge, was every man's portion, and was valuable, not only as a fact, but as an idea provocative of good results even from the humblest worker. Work was hard or difficult according to the will of the worker, and in this respect there was a great deal of difference in the relations of employers with workmen. As regarded any limitation that should be put on work, he said from a sanitary and health point of view eight hours was a good standard, not absolute, because the pressure of work varied, but as a fair average. What was wanted in order to get at that standard was not so much change in the relations between employer and employed as a change in the public mind, the public at large being most exacting in their demands, and making hard workers keep long hours really for no useful purpose whatever. It would be a good point to begin with if the hours of buying and selling could be reduced. Three classes of work were of special moment: where with bodily exertion the intensest watchfulness was demanded—as, for example, in the case of the railway engine-driver; where it was one continued grind and monotony, as in the case of postmen; and where the work was excessively hard—as in pile-driving. There were occupations in which the body was in a bent position while at work, in which cases the period of eight hours for work was the maximum, and was often too long. Objection might be made to these arguments that man was not a mere machine, but had a mind. But this only made the toil the harder, for the mind was at work all the time. Another objection was that some luxuries, like indulgence in alcoholic drinks, might promote decay more rapidly than the hardest work, and that the men who had no occasion to work injured themselves by physical labours and pleasures quite as much as those who had to work for their bread. There must also be a better system of recreation during week days, in which music must play a large part—music which could be provided in great extent by the working classes themselves. For health's sake and life's sake, for the health and life of the nation as well as of the individual parts of it, the periods of labour required a great deal of lightening. An example bearing to millions of minds a meaning as beautiful as it was forcible required to be set. The yoke might be made easy, the burden light, before the healthy working heart could beat out, to the full length of days, the healthy body and the healthy mind. Selfishness and want of common sense had to be removed, and it was for associations like the Sanitary Institute to make those reforming ideas known far and wide, and so lead to what they so much desired—the best cultivation of the garden of the world.

LEAD-POISONING BY MEANS OF WATER.

Professor Percy Frankland read a paper on Lead Poisoning by Soft Water. As the subject is one of great importance and has lately attracted much attention, we give

the following extracts from Dr. Frankland's paper:—"It is, perhaps, one of the most remarkable features of this subject that, although the sources of water-supply remain unchanged for long periods of time, still the mischief in question is often lost sight of for a number of years, and then again makes its appearance almost after the fashion of an epidemic. This periodical publicity is no doubt to a certain extent a matter of accident; but it is also unquestionable that one and the same water-supply may have the power of acting upon lead at one time, and become inactive at another. If we inquire into the cause of this activity, we find that opinion at the present day is even more divided than in the past. According to some authorities it is due to the presence of acidity in the water; according to others, the cause is to be sought in an insufficiency of dissolved silica; whilst others, again, see, in the absence of a certain proportion of dissolved carbonic acid, the secret of the lead-dissolving power. The examination of water for activity towards lead, if it is to be satisfactory, must be conducted with much circumspection and care. It is not sufficient to place a strip of metallic lead in contact with a certain quantity of the water, and then watch the result, but the water should be placed in a piece of lead service pipe closed at both ends, and after remaining there for a definite length of time (say twenty-four hours) the amount of lead in suspension and solution should be carefully determined. It must be further borne in mind that some waters act more upon new lead than upon old, whilst others act upon the old or corroded metal more than upon the bright untarnished surface; and on this account it is very desirable that the above test should be made with a new piece of service pipe as well as with an old one. Again, the tests should be continued over as long a period of time as possible in order to watch the progress of the action. Thus in some cases it will be found that the water acts more upon the new pipe than the old, and *vice versâ*; sometimes that the water acts more and more upon the pipe from day to day, and *vice versâ*; so that experiments made only with a new or only with an old pipe, as well as experiments not continued over a sufficient period of time, would lead to most erroneous inferences being made. As regards the use of old pipes, these should of course have been in use with the water under examination, otherwise no satisfactory deductions can be made, and hence, if it is a question of a new water-supply, the important matter is to observe whether, with a new pipe, the amount of lead in suspension and solution increases or diminishes from day to day. Of all the methods of preventive treatment with which I have experimented, by far the most efficacious consists in the addition of a certain proportion of carbonate of soda to the water. In addition to its efficiency, the method possesses the advantage of avoiding the expensive erection of filter beds, with the necessary frequent renewal of the filtering material; again, the dose of carbonate of soda can be varied according to the necessities of the case, and even with the same water it may advantageously be varied from time to time, inasmuch as the activity, in the case of surface water, generally varies much with the season. As regards the quantity of carbonate of soda it is necessary to add, this must be ascertained by actual experiment in every particular instance; but in an extreme case I found it necessary to use 5 parts of soda to 100,000 parts of water by weight, which, with carbonate of soda at £5 a ton, represents a cost of 3*d.* per 1000 gallons. In conclusion, I would point out that it is the duty of the medical officer of health, or of any other local sanitary authority, to see that, in all towns supplied with water which is known at times to possess activity towards lead, the consumers are duly informed of the best means of protecting themselves individually from the dangers of lead-poisoning. This would probably be best effected by the periodical house-to-house distribution of a suitable leaflet pointing out—(1) That no water should be collected for drinking purposes until after the tap has been allowed to run for such a length of time as will presumably clear the service pipe, and that the drinking or cooking water may therefore be advantageously collected immediately after a considerable quantity of water has been drawn for other domestic purposes. (2) That the filtration of the water through any form of animal charcoal filter practically guarantees its absolute freedom from lead. (3) That hot water acts more powerfully on lead than cold, and that therefore metal teapots and other soldered vessels for holding hot water should be avoided as much as possible.

VISIT TO THE COUNTY ASYLUM.

In connexion with the Congress, a visit was made to the County Lunatic Asylum. The asylum, of which Dr. C. E. Saunders now has control, was built in 1859, and is in the Italian style of architecture, the south front, with its two large towers and smaller campaniles, commanding extensive prospects, and being itself a conspicuous feature in the landscape, as seen for miles around. The asylum contains 500 beds on the female side and 380 on the male, while ten beds for each sex are always kept ready at the sanatorium. The site of the asylum is over 240 acres in extent, in an elevated position, to the south-east of Haywards Heath. The ventilation and drainage appear very complete. The sewage is treated on the sewage farm of the establishment, about eleven acres. The irrigation land lies high and dry, the soil being variable from clay to friable loam and gravel, and needing no under-draining. A standing crop of rye-grass is the chief thing grown, and most luxuriant crops are obtained. A feature of the asylum is also its water-supply, obtained from an artesian well, 217 feet deep. From this depth the water rises to within ten feet of the surface, and unless pumped would run off at the rate of 100,000 gallons a day. The water is pumped up into two large tanks of 20,000 gallons each for the domestic supply, and two tanks of 14,000 gallons each are kept charged with water in case of fire. The oxidation of the iron contained in the water is obviated by pumping the water through a fountain, which is another feature of the asylum grounds.

VISIT TO THE INTERCEPTING TUNNELS.

A visit was paid to the Brighton Waterworks, and many members of the Congress, under the guidance of Mr. Baker, the engineer, descended into the intercepting tunnels, which are 2800 ft. long, with a width of about 9 ft., and a height varying from 6 ft. to 15 ft. These tunnels are some 150 ft. below the surface, and intercept an unlimited amount of pure water, which filters into them from the chalk downs to the north. The tunnels had been by great effort pumped empty for the Congress, and the water discharged through the town sewers. In the evening the Mayor and Mayoress held a conversazione in the Pavilion, which was very numerously attended.

THE BRITISH ASSOCIATION.

THE meetings of this Association have been held at Leeds during the past two weeks, and much important and interesting work has been done, dealing with all aspects of every branch of science from top-spinning and torpedoes to the invertebrate fauna and Kleinenberg's monograph on Lopadarynchus.

In the Biological Section, Professor Milnes Marshall interestingly treated the Development of Animals, in a paper of which we subjoin a short *résumé*. He said that embryology, though still in its youth, had of late years thriven mightily, because of the fascination which it exercised over those given to its study; but the watching of all the processes of development was of trifling moment compared with the great generalisation, which showed that the development of animals had a far higher meaning; that the several embryological stages and the order of their occurrence were no mere accidents, but were forced on an animal in accordance with a law, the determination of which ranked as one of the greatest achievements of biological science. The doctrine of descent or of evolution taught that as individual animals arose, not spontaneously, but by direct descent from pre-existing animals, so also was it with species, with families, and with larger groups of animals, and so also had it been for all time; that as the animals of succeeding generations were related together, so also were those of successive geologic periods; that all animals, living or that had lived, were united together by blood relationship of varying nearness or remoteness; and that every animal now in existence had a pedigree stretching back, not merely for ten or a hundred generations, but through all geologic time since the dawn of life on this globe. The study of development, in its turn, had revealed to us that each animal bore the mark of its ancestry, and was compelled to discover its parentage in its own development; that the phases through which an animal

passed in its progress from the egg to the adult were no accidental freaks, no mere matters of developmental convenience, but represented more or less closely, in more or less modified manner, the successive ancestral stages through which the present condition had been acquired. Evolution told us that each animal had had a pedigree in the past. Embryology revealed to us this ancestry, because every animal in its own development repeated this history. Such was the Recapitulation Theory, hinted at by Agassiz, and suggested more directly in the writings of von Baer, but first clearly enunciated by Fritz Müller, and since elaborated by many, notably by Balfour and by Ernst Haeckel. Proceeding to give illustrations of this theory by reference to different groups of animals, he next pointed out that although it was undoubtedly true that development was to be regarded as a recapitulation of ancestral phases, and that the embryonic history of an animal presented a record of the race history, yet it was also an undoubted fact that the record so obtained was neither a complete nor a straightforward one, for closely allied animals differed markedly in their mode of development. He dwelt with favourable emphasis upon Kleinenberg's theory as to the development of new organs, but expressed the opinion that it is yet too early to realise the full significance of it. Embryology, however, though a powerful and efficient aid, could not provide an immediate or complete answer to the great riddle of life; it was a means, not an end. Anatomy defined the goal, and embryology offered a means of attaining it.

Another interesting paper was that of Professor John Berry Haycraft on the Structure of Muscular Fibre, which he illustrated by castings taken in collodion. He said he had ten years ago published the results of an experimental research, which showed that the cross striping of a muscle depends on the moniliform shape of the muscle fibrils, and not upon their structure. It occurred to him some months since that the point could be definitely settled if castings could be taken of muscular fibres. If the casts should exhibit the microscopical appearances of the muscle, then those appearances could only be due to its form. He tried a great many methods in vain, but at last hit upon a way of stamping moist collodium with the fibres. A drop of collodium was placed upon a glass slide, and before it was quite dry some muscle fibres were pressed upon it with the finger tip. These were then removed, and the film, on being examined with the microscope, was seen to be covered by exquisite impressions of the fibre.

Great interest was manifested in the business of the Anthropological Section, but more particularly in the address of the President, Dr. Evans, which was read by Professor F. W. Rudler. This was a very compendious statement of the present position of the science. One of the most vital questions was: What is the antiquity of the human race—or rather, what is the antiquity of the earliest objects hitherto found which can with safety be assigned to the handiwork of man? This question is susceptible of being entirely separated from any speculations as to the genetic descent of mankind; and even were it satisfactorily answered to-day, new facts might to-morrow come to light that would again throw the question entirely open. On any view of probabilities, it is in the highest degree unlikely that we shall ever discover the exact cradle of our race, or be able to point to any object as the first product of the industry and intelligence of man. It may, however, be hoped that from time to time fresh discoveries may be made of objects of human art, under such circumstances and conditions as may enable us to infer with certainty that at some given point in the world's history mankind existed, and in sufficient numbers for the relics that attest this existence to show a correspondence among themselves, even when discovered at remote distances from each other. Of late years how little have we heard of any scruples in accepting as a recognised geological fact that, both on the continent of Europe and in these islands, which were then more closely connected with that continent, man existed during what is known as the quaternary period, and was a contemporary of the mammoth and hairy rhinoceros, and of other animals, several of which are either entirely or locally extinct. The principal instances on which the believer in tertiary man relies may be classified under three heads: (1) The presumed discovery of parts of the human skeleton; (2) that of animal bones said to have been cut and worked by the hand of man; and (3) that of flints thought to be artificially fashioned. On the whole, therefore, he thought that the present verdict as to tertiary man must be in the form of "not proven." As to the origin and home of the Aryan family, the last twenty years had seen important changes; but, after all, they were speculations merely. In concluding, the speaker said: "There are, indeed, now but few parts of the world the inhabitants of which have not, through the enterprise of travellers, been brought more or less completely within our knowledge. Even the centre of the dark African continent promises to become as well known as the interior of South America, and to the distinguished traveller who has lately returned among us anthropologists as well as geographers owe their warmest thanks. It is not a little remarkable to find so large a tract of country still inhabited by the same diminutive race of human beings that occupied it at the dawn of European history, and whose existence was dimly recognised by Homer and Herodotus. The story related by the latter about the young men of the Nasamones who made an expedition into the interior of Libya, and were there taken captive by a race of dwarfs, receives curious corroboration from modern travellers. Herodotus may, indeed, slightly err when he reports that the colour of these pigmies was black, and when he regards the river on which their principal town was situated as the Nile. Stanley, however, who states that there are two varieties of these pigmies, utterly dissimilar in complexion, conformation of the head, and facial characteristics, was not the first to rediscover this ancient race. At the end of the sixteenth century Andrew Battel, our countryman, who, having been taken captive by the Portuguese, spent many years in the Congo district, gave an account of the Matimbas, a pigmy nation of the height of boys of twelve years old; and in later times Dr. Wolff and others have recorded the existence of the same or similar races in Central Africa. Nor must we forget that for a detailed account of an Acca skeleton we are indebted to the outgoing President of this Association, Professor Flower."

A paper on the Doctrine of Heredity was submitted by the Rev. F. O. Morris, which met with adverse though kindly criticism. It treated all the so-called conclusions as to heredity as based upon assumptions that were not proved and deprived of all value by a scientific uncertainty which could make no confident predictions. He hoped he would be excused for exclaiming, in the words of Madame Roland's apostrophe to Liberty, "O, Science! what nonsense is written in thy name!"

Another paper which excited considerable attention was that of Dr. Hambleton on Physical Development, in which an account of the work done at the London Polytechnic in Regent-street was given. He exhibited tables giving the measurements of 100 members, who had obtained an increase of the chest girth of one inch and upwards. Their average increase is a little over one inch and three-quarters. That increase had taken place in small as well as in large chests, whether the men were tall or short, under or over twenty-one years of age, and with or without gymnastic training. The members are engaged in over fifty different trades and occupations. He maintained they had the knowledge and power to stamp out consumption.

A series of able papers were read in the Chemical Section, of which Professor T. E. Thorpe was President, dealing with the Development of Chemical Science, by the President, and the Present Method of Teaching Chemistry, by Professor W. R. Dunstan. Sir Henry Roscoe introduced a discussion on Recent Legislation for Facilitating the Teaching of Science. Mr. C. H. Bothamley gave some interesting information concerning the Sulphur Waters of Yorkshire. He said the waters were divided geologically into two groups. In the one case they commenced at Clitheroe, in Lancashire, and practically ended at Harrogate; whilst in the other they ran along a vale to the south of Leeds in the direction of Goole. Whilst the Harrogate waters were comparatively deep-seated, those at Askern were surface waters. As regarded solid matter, the Askern waters were very dilute compared with those found in the Harrogate springs. The former were not quite as strong as the strongest of the latter, but they were stronger than the mild Harrogate sulphur waters. The Askern waters contained a large proportion of organic matter, owing to the fact that they took their rise in a peat bog. The two groups of waters alluded to were of totally different characters, generally speaking, although they resembled each other in being somewhat highly sulphuretted. The Pollution of the River Aire from its origin until it reaches

the Humber formed the subject of a paper read by Mr. T. H. Easterfield, B A., which must have had more than passing interest for the inhabitants of Yorkshire.

On Sunday evening last the Bishop of Ripon preached in Holy Trinity Church, Leeds, on the subject of Science and Religion. Religion and Science, he said, in every age could only be represented to that age through the human instrumentality of the men of science or the men of religion, and the mutual hostility might be chargeable rather to the infirmities that belonged to man than to anything which essentially belonged either to religion or science.

BRITISH PHARMACEUTICAL CONFERENCE.

THE address of Mr. Charles Umney, F.I.C., F.C.S., President of the British Pharmaceutical Conference, which held its sitting at Leeds last week, was mainly occupied with the topic, "Fashion in Medicine." In this the views expressed corresponded to a great extent with those enunciated by Dr. Broadbent, who spoke very strongly at the recent meeting of the British Medical Association at Birmingham on the rage for new drugs. Another point on which Mr. Umney laid stress was the traffic in patent medicines, and the damage to the public by the sale of poisonous drugs under cover of the medicine stamp. Mr. Umney prefaced his remarks by referring to the ever-widening field of pharmacology and its application to medicine and surgery, which rendered a complete summary of work and progress during the preceding year more and more difficult to produce and less suitable to the limits of a presidential address. It cannot be contended, he remarked, that medicine, striving year by year to become a less inexact science, knows no fashion; although it might be urged that there was in medicine a licence for adopting fashions without parallel in any other profession or calling, solely due to the rapid strides of science.

During the past thirty years the materia medica has multiplied to no inconsiderable extent, old remedies have been discarded, a legion of new drugs introduced, crystalline and resinoid principles adopted to the almost entire exclusion of the crude substances from which they are prepared, and synthetical substances often take the place of alkaloids, which were a novelty but a generation ago. Notwithstanding, however, the disuse into which a long list of crude substances has fallen, certain drugs are as much relied upon to-day as they were half a century ago; and this is not to be wondered at when we remember that the medicinal value of such crude drugs as opium, cinchona, &c., depends upon the presence of certain well-defined chemical principles, which we are accustomed to isolate; and upon the proportion of which in the crude substance it is customary now to assess both medicinal and commercial value. It is the practice also to standardise these and similar drugs to contain a definite proportion of chemical constituent, so that the physician may use these remedies with greater precision. Other drugs, the use of which still continues—such as jalap, scammony, aloes, gamboge, &c—are not prescribed as frequently as formerly, and to some extent this has arisen from lack of uniformity in the substances themselves. Sarsaparilla and some other drugs, though almost discarded by therapeutists, are still largely used by the public. Among external medicaments, lard as a basis for ointments has been almost entirely displaced by solid and semi-solid hydrocarbons, or the more easily absorbed lanoline. Plasters have been discarded for the use of oleates of powerful inorganic bases such as zinc, mercury, and bismuth. Concentrated percolates, which represent the entire active constituents of potent drugs, are now largely used, such as the pharmacopœial liniments of aconite and belladonna. Want of uniformity, even when freshly prepared, or change and decomposition on being stored, have diminished the esteem in which such preparations as grey powder, antimonial powder, or green iodide of mercury were formerly held.

Although the legitimacy of most of these charges must be acknowledged we cannot shut our eyes to the fashion that prevails in discarding antiquated though well-tried remedies in favour of newly introduced drugs. It is fashionable with some to prescribe medicines in the most concentrated form in which the ingredients are compatible, regardless of potency. A concentration of two or three times over and above that which may with safety be practised is now an every-day requirement. "Elegant pharmacy" has something to answer for, its products having been appreciated by the eye and palate of the public, without corresponding advantage to the physician in continuing his art of prescribing. Still more may be said of the fashion of ordering ready-made physic. This practice, which is increasing by leaps and bounds, has been condemned by a leading London physician of half a century's experience, who writes: "There has grown up a habit of prescribing ready-made physic, of using compounds which contain a variety of drugs, each having different properties—a practice in which there is mental proclivity to regard the disease as suitable to the physic rather than to take the trouble to find a remedy that is suitable for the disease. This system is unpractical, unscientific, and least calculated to promote a knowledge of the medicinal legitimate use of medicine. In fact, the art of writing a rational prescription is in danger of being lost."

Reflection must convince us that medical art is deprived of much opportunity, pharmacy undermined, the public not benefited, but, on the contrary, seriously damaged, by a fashion that has of late years both prevailed and greatly increased, and which may be described as the injudicious selection by the public of medicines to be used as household remedies. Many are of such composition that they should not be sold without being placed under the restrictions which accompany the sale of substances similar in composition included in the schedule of poisons in the Pharmacy Act.

In the year 1860 the revenue received from medicine-stamp duty was £43,000; in the year 1889, £203,000; and during the current year it is computed that £220,000 and upwards will be realised. Whereas in 1860 there were about 10,000 vendors, there are at the present time but 23,000, indicating, notwithstanding the total sales are five times as large as they were a generation ago, that the registration of vendors has only increased to half that extent, and the sale, consequently, by each licensed vendor has practically doubled. It will, perhaps, surprise some people to learn that the amount paid by the public for patent medicines is not far short of a million and a half sterling annually. The medical profession is aware that a section of the public becomes habituated to the use of hydrate of chloral, opiates, and other narcotics solely from the cloak that is adroitly spread around this matter by the medicine-stamp regulation. A refusal to supply poisonous patent medicines except under a medical prescription is resented by the public, and the patent medicine vendor, who may be a grocer, stationer, or any individual, without the faintest knowledge of drugs, may, for the small fee to be paid for a licence, sow poisons broadcast.

The time has at last come when those who practise legitimate pharmacy may, without arrogance, view their relation with the medical profession, and with the General Medical Council in particular, with the greatest satisfaction and pleasure. The British Pharmaceutical Conference has in some degree contributed to bringing about a better appreciation of pharmacists by the medical profession, for many of the more important communications that have appeared in the "Year-book of Pharmacy" have from time to time been the subject of favourable comment in the medical press, and have not been without their influence upon medicine and surgery.

THE TRADES UNION CONGRESS AND SANITATION.

(FROM OUR SPECIAL CORRESPONDENT.)

IT is not within our province to discuss the political merits and significance of the Trades Union Congress. The Congress was of a representative and important character, and among the matters brought before the delegates were several that bore upon sanitation and public health. Not a day passed but some subject came forward of interest to the profession.

The Congress met at Hope Hall, Liverpool, on Monday, Sept. 1st, to elect its officers and transact formal business.

No less than seventy-six resolutions were printed on the agenda paper, and, with the exception of two or three that were withdrawn, they were all dealt with by the Congress. The second of these numerous resolutions had a direct bearing on forensic medicine. It was pointed out that coroners' juries appointed in cases of accidents very generally had no knowledge of the questions brought before them. How could a tradesman judge the cause of an accident in a coal mine? Cases were related of the extraordinary ignorance displayed by jurymen. It was suggested that men of the same trade as the deceased should sit on the jury, and as these would in most cases be workmen, they could not afford to lose a day's wages, and ought therefore to be paid for their time. To this it was objected that if a workman sat on a jury and made his voice heard he would become a marked man, and might have some difficulty with his employer. A delegate from Bradford related that the Corporation of that town had enacted certain by-laws to protect the workers from the woolsorters' disease, which was so prevalent in that town. But though these by-laws were good enough, there was no efficient body of inspectors to see them carried out. The right to challenge juries when such by-laws had not been applied should exist. A delegate for Glasgow insisted on the preventable loss of life at chemical works, and that the truth as to what really took place was unknown to the public because the workmen engaged did not dare to relate what they knew. A resolution demanding that workmen should sit on coroners' juries when an accident had occurred to one of their fellow workmen was carried.

The question of the inspection of factories and the sanitary condition of factories was discussed on several occasions, and the delegates frequently confirmed much of the information given in the special reports on sweating published by THE LANCET. The insufficient number of factory inspectors was a subject of very general complaint. At Sheffield the inspector could not get round to the factories more than once in six to nine months. At Bradford the woolsorters did not dare to complain when the fan which should draw away the poisonous dust was not in working order. Mr. Davies of Birmingham, who had been a factory inspector for six years and a half, bore testimony to the excessive size of the districts one single inspector had to control. Other delegates bore witness to the frequency with which women were made to work longer than the time prescribed by the Factory Act. Mr. Frenchman, delegate of the East-end London tailors, related how for many years he had worked in a sweating den with women as late as twelve o'clock at night. Mrs. McConnell, of the Female Bookfolders' Trade Union, explained that in her trade women worked from fifty-four to fifty-six hours a week for from 6*s.* to 7*s.* Their health was not only injured by insufficiency of food, but they had to go out in the wet streets to get their meals, and then come back and work the rest of the day in damp clothes. She thought that where a number of persons worked together there should be a dining-room on the premises. Mrs. Skelley, of the Liverpool Tailoresses' Union, declared that members of her trade were unanimous in demanding the appointment of more inspectors, and these in some cases should be women. The workwomen would be able to speak more easily to a woman inspector, especially if their complaints related to sanitary matters. She had found very often that when the inspector was about to visit a tailor's workshop the women were sent to other parts of the house, and were thus never seen by the inspector. In many shops, though the women were supposed to be allowed an hour for dinner, either at 12 or 1 o'clock, they were often kept by stress of work till 4 and 5 o'clock. This irregularity in the meal hour, coupled with excessive work in unwholesome, overcrowded workshops, contributed greatly to ruin the health of tailoresses. Not only are the wages insufficient, but numerous fines are inflicted which greatly reduce the earnings, especially of female workers. In some workshops women are charged 1*d.* per week for a peg to hang their hats and cloaks upon. Other employers charge 1*d.* for the lavatories, some 3*d.* a week for washing the floor of the workshop, yet the women have to do the scrubbing themselves; the money they pay is supposed to be spent in buying soap and brushes. In the face of all these facts, resolutions were carried demanding the abolition of fines in factories, the increase of factory inspectors, and the nomination of some women as inspectors, together with men who had a practical knowledge of the "tricks of the trade."

Somewhat akin to this subject is the dead set made against subcontracting, or, in other words, sweating. A resolution was unanimously carried demanding that contracts in connexion with public works should not be given out, but the work should be done by the municipal bodies themselves or given to workmen's associations. The contractor, who so generally employs the sweater, was denounced hip and thigh. A resolution was carried stating that, "seeing the evils of the sweating system are so enormous and widespread, this Congress deeply regrets, after such an extensive inquiry by the Lords Committee, nothing has been done by them to try and reduce the misery or the sufferings of those affected thereby, and we instruct the parliamentary committee to bring all the influence possible to bear on members of the House of Commons with the object of obtaining beneficial legislation." Mr. Louis Lyons explained that in many East-end tailors' workshops the workers had only 120 to 180 cubic feet of space to work in, while a convict in a prison enjoyed 400 to 500 cubic feet. The garments were made under conditions well calculated to spread disease, and it was a mistake to imagine that only very cheap clothes were made in sweating dens. Clothes ordered for the Royal Family had been traced to the East-end. A woman, he thought, required more space in a workshop than a man, though she generally had much less. Very often there was but one closet for both men and women, and sometimes this was situated in the very centre of the workshop. He urged that before a place could be opened as a workshop a licence should be obtained, and this licence should not be granted till the premises had been duly inspected. He could show that naval uniforms had been made in noisome cellars, and so badly made that they split after they had been worn but a very short time. Why should not workshops be controlled like public-houses and theatres? A resolution was carried in consequence of these arguments demanding that notice must be served on the local authority as to intention of opening a workshop, and within six days of receipt of this notice a sanitary and technically qualified inspector should visit such place to see whether it is sufficiently lighted and decent sanitary accommodation provided for both sexes. The workshop must be properly ventilated in proportion to the number of persons to be employed therein; "and in all cases there shall be not less than 600 cubic feet of space provided for each person employed." With a view to abolishing sweating, another resolution was passed, demanding that goods should bear a stamp showing where they had been made, so that if they were not made by the person from whom they were purchased, the purchaser might know by whom and in what place they had been manufactured. Another resolution was passed as follows:—"That it be an instruction to the Parliamentary Committee to prepare a Bill for the prohibition of the employment of workpeople in underground workshops or cellars where this is not rendered absolutely necessary by the nature of the business, and to provide, where such underground workshops are so rendered necessary, for a more thorough system of lighting and ventilation."

The Congress was strongly in favour of extending the provisions of the Factory and Workshops Act to domestic workshops, and the delegate of the laundresses wanted to comprise in this all places where washing was done. She gave a striking account of the insanitary condition of laundries in the Fulham district, where women had to stand and work ankle deep in muddy water. The Congress further showed its interest in sanitary matters by unanimously passing a resolution in favour of the compulsory registration of plumbers, who should not be allowed to work as plumbers till they have passed the examinations instituted by the Worshipful Company of Plumbers of London.

Finally, there was considerable discussion about the insanitary condition of ships at sea; but this is a subject which may be reserved for a separate study. For the moment enough has been said to show that sanitary questions engaged a large share of the delegates' time and attention, and to indicate in what manner the trade unions would wish to see these questions settled.

YELLOW FEVER ON AN IRONCLAD.—H.M.S. *Buzzard* is reported to have arrived at Halifax with several cases of yellow fever among the crew. At one time there were nineteen cases on board. One death has occurred, and several of the ship's company are said to be still down with the disease.

INTERNATIONAL EXHIBITION, EDINBURGH, 1890.

AMONGST the exhibits at the International Exhibition, which has been open during the summer in Edinburgh, a number are of medical interest, and those of interest from the standpoint of sanitation may be noted first.

Sanitary Appliances.—One of the most complete and interesting exhibits in sanitary and ablutionary appliances is by Messrs. Shanks & Co. of the Tubal Works, near Glasgow. They show a very complete combination bath which has been patented as the "Eureka" bath; it has in addition to the ordinary plunge bath a large circular end with a canopy, sides, and back in which are fittings for spray, and shower, and wave bath, while a depression in the bottom has adapted it for a sitz bath or an ascending douche. The mixing of the hot and cold water for these various adaptations is on a simple principle, and is worked with unusual facility and without that multiplicity of screws which characterises some combination baths. A "ship lavatory," also shown by the same makers, would be very suitable for a consulting-room, and is either fitted with a cistern, or attached directly to a supply pipe. It would be most useful where direct connexion would be inconvenient. It folds up, and of course includes a dirty water receptacle equal in capacity to the cistern. Two modifications in the construction of w.c.'s deserve notice. One is a "combination closet and cistern," in which the cistern is attached to the seat behind, and where an instantaneous flush from a large inlet and a bottom stream compensates for the lack in height of the cistern. It causes less noise than the average wash-out tubal closets. The second is a new wash-down closet, called the "Citizen," which has a gutter-shaped depression, 4 to 5 in. in diameter, in the bottom of the pan, and continuous of course with the exit pipe, the water power being in front. This gives the impression of being a very effectual cleanser. They also show iron soil-pipes, enamelled inside with glass, professedly to prevent rust, but they would of course also allow greater freedom in the use of antiseptic substances, some of which, as is well-known, act injuriously on metal pipes. A new design of basin for use in schools completes the exhibits of special interest by this firm.

Mr. Jennings of Lambeth-palace-road, London, shows a considerable variety of flush waterclosets, with pedestal vase and counterbalance seats, and other bath-room fittings. One of the most notable exhibits here is a "combination lavatory and urinal," in which is fitted, under a tip-up washbasin, a urinal, concealed by a door, the opening of which turns on the water-supply. This arrangement ought to materially lessen, if it should not entirely remove, some of the objections to urinals in private houses, for not only is there this practically automatic water-supply, but the water from the tip-up washbasin above would further tend to keep the pipes sweet. It may be commended as worthy of consideration in the fitting-up of a consulting-room or surgery. He also shows a portable watercloset for invalids' apartments fitted with a supply cistern, and an improved chair commode with an air-tight cover. A patent ventilating grate by the same maker, and known as the "London" grate, consists of a terra-cotta back and smoke flue, behind which there is a series of warming chambers, arranged somewhat in the form of a double spiral, and which are supplied by fresh air from an outside grating on the floor level, while the heated air passes into the room through a grating at the upper part of the metal front, and which can be closed or opened at pleasure. This, like the "Manchester" grate, is an attempt to utilise the heat which in ordinary grates is largely lost; but there is one point which those who are devoting attention to this subject might bear in mind, and that is the desirability of such grates being constructed so that the chambers in which the air is heated could be readily reached for regularly removing the dust and filth which in course of time necessarily accumulate in them, and which must taint the fresh air passing through them. A large assortment of earthenware fittings for closets, urinals, bath-rooms, and lavatories is shown by Messrs. Robert Brown & Sons of Paisley.

An ingenious as well as a useful patent is the exhibit by Maughan's Patent Geyser Company, Limited, of an instantaneous water heater. It consists of a metal cylinder, inside which are a large number of spiral wires, down which water trickles, and which, from its fine subdivision, is rapidly heated by the hot air in the cylinder. The air in the cylinder is heated with gas or oil. It would be especially useful where hot baths were required promptly, and the apparatus, being portable, it might be used in hospital wards. The quickest apparatus made gives thirty gallons of hot water in three minutes, but the more ordinary ones take from seven to ten minutes for an ordinary bath.

POST-GRADUATE COURSES.

IN the belief that it is very desirable to increase the opportunities for clinical instruction in London and other centres of medical education, arrangements to hold post-graduate classes have been made in London, Edinburgh, and other medical schools in the provinces. In Edinburgh the practical courses will be open to graduates from Sept. 22nd to Oct. 11th, 1890. The courses include bacteriology, ophthalmic diseases, diseases of the chest and throat, children's diseases, aural surgery, electricity and massage, diseases of the nervous system, &c. Fuller information can be obtained from the lecturers. The fee for each course is two guineas, with the exception of massage, for which £1 1*s.* is demanded, and of bacteriology, which costs £3 3*s.* Application should be made before Sept. 15th to Alexander Bruce, M.D., Surgeons' Hall, Edinburgh. Arrangements have been made to hold a third course in London, to be given by the members of the medical staffs of the Hospital for Consumption and Diseases of the Chest, Brompton; the Hospital for Sick Children, Great Ormond-street; the National Hospital for Epilepsy &c., Queen-square; the Royal London Ophthalmic Hospital, Moorfields; the Hospital for Diseases of the Skin, Stamford-street, Blackfriars; and the New Infirmary, Paddington. The teaching will be, as far as possible, of a practical character, including demonstrations of selected cases and lectures on the diagnosis and treatment of diseases, for the study of which the above-mentioned hospitals afford facilities. The course will consist of seventy-two lectures or demonstrations. The fees for the course will be nine guineas, and for attendance on the lectures at any one special course one or two guineas, according to the number of lectures. The lecturers are chosen from among eminent men in their respective departments in London. Applications for cards of admission and for further information should be addressed to J. Fletcher Little, M.B., 60, Welbeck-street, Cavendish-square, London, W.

DEATH UNDER THE ADMINISTRATION OF ETHER.

ON Thursday, Aug. 28th, Mr. W. H. Phillips, the Borough Coroner for Wolverhampton, held an inquest on the body of Albert Bate, twenty-one, a journeyman miller, whose death had taken place the previous evening in the operating theatre of the Wolverhampton and Staffordshire General Hospital under somewhat unusual circumstances.

The coroner, in opening the inquiry, explained that the information he had received was to the effect that the deceased young man had died suddenly at the hospital whilst undergoing some operation, and immediately after the administration of ether to produce insensibility. In cases where death took place under such administration, it was very desirable, in the interests both of the authorities of the hospital and the public, that the fullest possible inquiry should be held.

Mr. Arthur Henry Hunt, house surgeon at the hospital, stated that deceased was first admitted into that institution in May last. He was suffering from a swelling on the outer side of his left knee; it turned out to be a chronic abscess. The witness then detailed the circumstances of the case, which it is unnecessary to give here, as they will be found fully described in a letter from Mr. Hunt which we print in another column.

Mr. Vincent Jackson, senior honorary surgeon at the hospital, stated that the deceased had been a patient of his,

and had been under his regular observation since his admission to the hospital. He considered that the abscess on the knee indicated constitutional weakness. Witness had prescribed for him, and directed what should be done. He was present on the two previous occasions, and performed the operations spoken of by the last witness, the patient being under the influence of chloroform and nitrous oxide respectively. On each occasion the administration was perfectly satisfactory; no dangerous symptoms presented themselves, nor was anything noticeable to preclude the patient being put under similar influences on the occasion of the operation on Wednesday. Witness was not aware, however, of the operation that was performed on Wednesday until afterwards. It was one of a simple nature, and might safely be left to the discretion of the resident surgeon. From what he knew of the patient's condition it was a proper thing for the house surgeon to do what he did, and witness could not suggest any additional precaution that he should have adopted. Mr. Jackson went on to say that by directions of the coroner he had made a post-mortem examination of the deceased. He found on the outside of the chest a considerable layer of fat, and the muscles were slightly paler in colour than they might have been. The left lung was found to be healthy throughout, and so was the left pleural cavity. The right lung was also healthy, but it adhered to the wall of the chest on the right side, and the pleural cavity on the right was also closed by adhesions. The pericardium was entirely filled by the heart, which was unduly covered with fat, especially at its apex. The right side was found to be dilated and full of blood, but the left side was empty. The right ventricle was distended with blood, and its walls were thin. The internal valves of the heart were healthy, but the muscular substance of the organ was pale to the eye and soft to the touch, indicating fatty degeneration, which was also clearly shown when a minute portion was removed, and subjected to examination under the microscope. In reply to the coroner, witness said it was impossible to say definitely how long this fatty degeneration of the heart had been going on, in all probability for the last few months. He considered the deceased had a natural tendency thereto. He died from syncope, or fainting. It was one of those casualties that must occur every now and then. He did not believe that any examination of the patient previously to the administration of the ether would have enabled the operator to detect the existence of the disease which the post-mortem examination revealed, and no one would have suspected the existence of such a state of things in so young a man. Supposing he had been administering the ether himself, he should not have thought it necessary, under the circumstances, to do more than was done. He considered also that the selection of ether instead of chloroform was very judicious, as chloroform was depressing in its effects, and ether was stimulating. The heart weighed eleven ounces. Witness did not think that any patient in the hospital was placed under the influence of an anæsthetic without previous examination. That was the general rule, and was done so in the case of the deceased when he was operated upon. At the same time the knowledge that a patient was suffering from fatty degeneration of the heart was not prohibitive to his being put under the influence of an anæsthetic.

The jury returned the following verdict: "That the deceased died from syncope or fainting whilst under the influence of ether, and whilst undergoing an operation at the hospital; that at such time he was suffering from fatty degeneration of the heart; and that his death was the result of natural causes."

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Isle of Wight Rural District.—The death-rate for the Isle of Wight rural sanitary district during 1889 was 16·5 per 1000, but this included deaths amongst strangers. It is, however, significant that whereas from 1883 to 1887 the death-rate of the district varied from 5·9 to 2·9 below the average for England and Wales, it has since then hardly been 1·0 below that average. The past year was not marked by any striking occurrence of infectious diseases, and the authority, after making some preliminary inquiries as to an isolation hospital, determined to postpone this important question. Certainly, no proper effect can be given to the notification of infectious diseases until such provision is made, and the authority would do well to act on Dr. Groves's advice in the matter. Some new water-services are much needed, but certain good sanitary work is in progress. Thus, it has been decided to sewer Totland Bay, and there is a prospect of Carisbrooke being drained into the Newport sewers. By-laws are also in course of preparation to control some matters needing sanitary supervision. On the whole, the report gives evidence of a distinct move in the direction of sanitary progress and improvement, and it is to be hoped that the future may help to remove the impression, which previous reports naturally tended to promote, of a sanitary administration that was lax in the extreme.

Islington.—Dr. Tidy records a death-rate of 13·3 per 1000 for St. Mary, Islington, during 1889, both the death-rate and the birth-rate having undergone a steady diminution for some years past. Notification is referred to as the great event of the year, and it is stated that none of the drawbacks that were anticipated have been realised, all the medical profession having loyally accepted the system as one of the means for preventing the spread of disease. The general current work of the sanitary department presents no features of especial interest, but it was fully maintained during the year.

St. Giles.—In the St. Giles's district the general death-rate during last year was 19·9 per 1000, and the infantile deaths were at the rate of 14·7 per 100 registered births. A special account is given of the model blocks of buildings tenanted by the working classes. In the Great Wild-street block the general and infantile death-rates were 16·0 and 10·4 respectively; in the Little Coram-street block they were 7·1 and 14·2 respectively; in the Streatham-street houses the general death-rate was 13·0 per 1000; and in Newton-street, where the number of inhabitants was but small, it reached 40·1. But these figures cannot convey an accurate notion as to the healthiness or otherwise of these places, on account of the small numbers on which an annual rate has to be reckoned. But a return issued a short time since shows an admirable record of work in this direction. In it Mr. Lovett gives an account of 154,613 houses and premises inspected between 1875 and 1888, of 252 premises pulled down or otherwise dealt with under the Artisans' Dwellings Acts, and of three schemes of re-erections providing for 3338 occupants at a net cost of over £162,000. Concurrently with this work it is shown that the amount of death and sickness in the district has undergone material diminution, and that there has been a marked improvement in its general sanitary state. The return, in short, is one that shows an excellent and most creditable amount of work in one of the districts of the metropolis where the difficulties to contend with were at their greatest.

Wandsworth.—The Wandsworth district is under the jurisdiction of five medical officers of health, but they fortunately give a collective report as well as separate ones. On the whole area the death-rate for 1889 was 11·8 per 1000 after corrections for deaths in public institutions. The zymotic rate was 1·3, which indicates a great diminution in the amount of diseases of this class, the principal diminution having taken place as regards measles, whooping-cough, and diphtheria. What with the means of isolation afforded by the Asylums Board Hospitals and the coöperation of the school authorities, very helpful use is being made of the compulsory notification of infectious diseases in the district.

Salford Urban District.—Mr. Paget's first report on the borough of Salford contains one distinct improvement on the excellent series which was issued by his predecessor; it includes a map, showing by coloured dots the amount and distribution of infectious sickness which have occurred during 1889 within the several districts of which the borough is made up. Another map shows the rates of mortality in the several enumeration districts. The former map includes five diseases, and it becomes a question whether it would not be well to make several maps instead of one to show more clearly the actual locality infected, and to include such a disease as diarrhœa, omitting, if need be, puerperal fever, the localisation of which is hardly a matter of primary importance for charting purposes. The general death-rate for the borough during last year is put down at 23·0 per 1000, but Mr. Paget thinks that the corrected rate would be 25·0, and in connexion with this he emphasises the need for a

quinquennial census. The statistical history of the borough is very completely given, and under a number of headings are included the various measures adopted to maintain and to improve the public health. The diseases which were notified during the year were 2476 in number, of which 1283 were scarlet fever, 691 diphtheria, and 485 enteric fever. The diphtheria amounted to a serious epidemic which commenced in 1888, and continued nearly up to the end of 1889; and Mr. Paget issued a series of excellent regulations with a view to preventing its spread. These regulations and a number of other documents of an allied character form an appendix to the report. A large amount of hospital isolation was carried out during the year, special arrangements being made for diphtheria pending the completion of the new hospital at Ladywell.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns 5599 births and 3549 deaths were registered during the week ending Sept. 6th. The annual rate of mortality in these towns, which had been 21·0 and 20·7 per 1000 in each of the preceding two weeks, further declined to 19·0 last week. The rate was 17·9 in London and 20·0 in the twenty-seven provincial towns. During the first ten weeks of the current quarter the death-rate in the twenty-eight towns averaged 19·1 per 1000, and was 1·4 below the mean rate in the corresponding periods of the ten years 1880–89. The lowest rates in these towns last week were 12·7 in Huddersfield, 13 6 in Nottingham, and 14·1 in Bristol and in Bradford. The rates in the other towns ranged upwards to 24 8 in Sunderland, 25·3 in Preston, 28·1 in Wolverhampton, and 30 4 in Manchester. The deaths referred to the principal zymotic diseases, which had been 999 and 922 in the preceding two weeks, further declined to 726 last week; they included 425 from diarrhœa, 83 from measles, 82 from whooping-cough, 61 from scarlet fever, 46 from "fever" (principally enteric), 29 from diphtheria, and not one from small-pox. The lowest death-rates from these diseases were recorded in Halifax, Bradford, Bristol, and Sunderland, and the highest rates in Norwich, Manchester, Preston, and Portsmouth. The greatest mortality from measles occurred in Manchester; from scarlet fever in Liverpool and in Manchester; from whooping-cough in Preston, Newcastle-upon-Tyne, Norwich, and Huddersfield; from "fever" in Leicester, Preston, and Portsmouth; and from diarrhœa in Brighton, Wolverhampton, Hull, Cardiff, Preston, and Portsmouth. The 29 deaths from diphtheria included 16 in London, 5 in Manchester, and 2 in Salford. No death from small-pox was registered in any of the twenty-eight towns. Only one small-pox patient was under treatment in the Metropolitan Asylum Hospitals at the end of the week, and not one in the Highgate Small-pox Hospital. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of last week was 1503, against 1427 and 1464 on the preceding two Saturdays; the new cases admitted during the week were 206, against numbers increasing from 118 to 174 in the previous four weeks. The deaths referred to diseases of the respiratory organs in London, which had declined from 208 to 184 in the preceding three weeks, further fell to 180 last week, but exceeded the corrected average by 15. The causes of 57, or 1·6 per cent., of the deaths in the twenty-eight towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Norwich, Wolverhampton, Leeds, Sunderland, and in six other smaller towns. The largest proportions of uncertified deaths were recorded in Leicester, Sheffield, Oldham, and Halifax.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18 9 and 16 8 per 1000 in the preceding two weeks, rose again to 18·2 in the week ending Sept. 6th, but was 0·8 below the rate that prevailed during the same period in the twenty-eight large English towns. The rates in the eight Scotch towns ranged from 10·6 and 11·8 in Leith and Greenock to 19·7 and 21·6 in Paisley and Glasgow. The 470 deaths in the eight towns showed an increase of 36 upon the number in the previous week, and included 23 which were referred to whooping-cough, 18 to diarrhœa, 13 to scarlet fever, 11 to measles, 8 to "fever," 4 to diphtheria, and not one to small-pox. In all, 77 deaths resulted from these principal zymotic diseases, against 90 and 65 in the preceding two weeks. These 77 deaths were equal to an annual rate of 3·0 per 1000, which was 0·9 below the mean rate last week from the same diseases in the twenty-eight English towns. The fatal cases of whooping-cough, which had been 27 and 14 in the previous two weeks, rose again to 23 last week, of which 12 occurred in Glasgow and 4 in Edinburgh. The deaths referred to diarrhœa, which had been 40 and 32 in the preceding two weeks, further declined last week to 18, and included 5 in Glasgow, 4 in Edinburgh, and 4 in Dundee. The 13 fatal cases of scarlet fever showed a marked increase upon recent weekly numbers; 4 occurred in Glasgow and 3 in Aberdeen. The 11 deaths from measles showed an increase of 7 upon the number in the preceding week, and included 7 in Glasgow. The 8 fatal cases of "fever" showed a further increase upon recent weekly numbers, and included 5 in Glasgow. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 81 and 56 in the preceding two weeks, rose again last week to 77, and exceeded the number in the corresponding week of last year by 23. The causes of 43, or more than 9 per cent., of the deaths in the eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased in the preceding five weeks from 17 4 to 23·8 per 1000, declined again to 19·2 during the week ending Sept. 6th. During the past ten weeks of the current quarter the death-rate in the city averaged 20 5 per 1000, the rate for the same period being 18·5 in London and 16·5 in Edinburgh. The 130 deaths in Dublin showed a decline of 31 from the number in the previous week; they included 6 which resulted from diarrhœa, 4 from whooping-cough, 1 from measles, and not one either from small-pox, scarlet fever, diphtheria, or "fever." Thus the deaths referred to the principal zymotic diseases, which had been 14 and 22 in the preceding two weeks, declined to 11 last week; they were equal to an annual rate of 1·6 per 1000, the rate from the same diseases being 3 3 in London and 1·5 in Edinburgh. The deaths from diarrhœa, which had been 7 and 13 in the previous two weeks, declined again last week to 6. The 4 fatal cases of whooping-cough showed a further decline from those recorded in the preceding two weeks. The 130 deaths in Dublin included 26 of infants under one year of age, and 38 of persons aged upwards of sixty years; the deaths of infants showed a marked decline, while those of elderly persons exceeded those recorded in any recent week. Three inquest cases and 3 deaths from violence were registered during the week; and 38, or more than a third, of the deaths occurred in public institutions. The causes of 13, or 10 per cent., of the deaths were not certified.

THE SERVICES.

ARMY MEDICAL STAFF.—2nd Life Guards: Surgeon Percy G. R. Young to be Surgeon-Major, vice G. F. Hume-Spry, M.D., retired (dated Aug. 12th, 1890); Surgeon-Major Daniel Charles Grose, ranking as Lieutenant-Colonel, to be Brigade Surgeon, vice J. A. Scott, retired (dated Aug. 20th, 1890); Deputy Surgeon-General Wm. Walker, M.D., retired list, Bengal Medical Department, to be Honorary Physician to the Queen, vice Surgeon-General F. F. Allen, C.B., deceased (dated Sept. 10th, 1890).

MADRAS MEDICAL ESTABLISHMENT.—Deputy Surgeon-General William Fredk. de Fabeck, M.D., to be Surgeon-General (dated May 29th, 1890); Brigade Surgeon Charles Sibthorpe to be Deputy Surgeon-General (dated May 29th, 1890).

INDIAN ARMY.—The Queen has approved the retirement from the Service of the undermentioned Officers:—Deputy Surgeon-General John McNeale Donnelly, C.B., M.D., Madras Medical Establishment (dated June 1st, 1890); Deputy Surgeon-General William Farquhar, M.D., Madras Medical Establishment (dated July 1st, 1890).—The Queen has also approved that the retirement from the Service of Brigade Surgeon Hugh Griffith, Madras Medical

Establishment, be post-dated to May 31st, 1890.—The Queen has approved the following appointments to the Indian Medical Service:—To be Surgeons (dated March 31st, 1890): Bengal—Allan James Macnab, Henry Smith, M.D., Hugh Bixby Luard, Charles Neil Campbell Wimberley, and Ernest Wickham Hore. Madras—Wm. McNeely Wilson, William Dunbar Sutherland, Percy Carr-White, Edmund Hasell Wright, William Molesworth, Clarence Forbes Fearnside, Charles Arthur Johnston, and Gerald Godfray Giffard. Bombay—James Jackson, Ashton Street, Alan Jasper Heath, and John Bland Jameson.

ADMIRALTY.—The following appointments have been made:—Fleet Surgeons: Matthew F. Ryan to the *Black Prince* (dated Aug. 28th, 1890); Wm. Bainbrigge Fletcher has been placed on the retired list of his own request (dated July 21st, 1890). Staff Surgeons: Charles F. Newland to the *Marathon*, and Horace Browne to the *Calypso* (both dated Sept. 16th, 1890); John S. Lambert to the *Garnet* (dated Sept. 6th, 1890); Michael Ronan, B.A., to the *Active*, and Robert William Williams to the *Edinburgh* (both dated Sept. 6th, 1890); Arthur W. Russell to the *Penelope*, and Arthur W. May to the *Volage* (both dated Sept. 5th, 1890); Edward W. Luther to the *Malabar* (dated Sept 14th, 1890); Horace X. Brown to the *Calypso*. Surgeons: Paul W. Fraser to the *Ringdove*, and James S. Wray to the *Lapwing* (both dated Sept. 16th, 1890); Francis J. Lea to the *Imogene* (dated Sept. 6th, 1890); Clement Alsop to the *Excellent* (dated Sept. 5th, 1890); James C. F. Whicher to the *Polyphemus*, Francis M. Puddicombe to the Plymouth Division of Royal Marines, and Henry J. Hadden, B.A., M.B., to the *Dolphin* (all dated Sept. 6th, 1890); Joseph R. M'Donnell, M.D., to the *Goshawk*, and Joseph Chambers, B.A., M.B., to the *Impregnable* (both dated Aug. 28th, 1890); Wm. J. Colborne to the *Cormorant* (dated Aug. 30th, 1890); John D. Menzies, M.B., to Royal Marine Artillery Division, Eastney (dated Sept. 6th, 1890); Hubert William A. Burke to the *Edinburgh*, and Edward Cuffey, M.B., to the *Britomart* (both dated Sept. 6th, 1890).

VOLUNTEER CORPS.—*Artillery:* 1st Newcastle-on-Tyne (Western Division, Royal Artillery): Acting Surgeons A. T. Wear and P. H. Watson to be Surgeons (both dated Sept. 6th, 1890).—*Rifle:* 1st Volunteer Battalion, the King's (Liverpool Regiment): William Edward Crozier and Alfred Fisher to be Acting Surgeons (dated Sept. 6th, 1890).—2nd Volunteer Battalion, the King's (Liverpool Regiment): Acting Surgeons C. J. Macalister, M.B., N. E. Roberts, M.B., and C. T. Holland to be Surgeons (all dated Sept. 6th, 1890).

Correspondence.

"Audi alteram partem."

THE HYDERABAD CHLOROFORM COMMISSION.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of July 19th, 1890, Mr. John Hope Potter states that the Hyderabad Chloroform Commission contend that "the sudden fall in blood-pressure during the administration of chloroform is invariably due to a condition of asphyxia." This is a mistake. In the paper published by me, as President of the Hyderabad Chloroform Commission, in THE LANCET of June 21st, 1890, it is contended that the sudden falls of blood-pressure, with pallor, which are observed during the *improper* administration of chloroform, are invariably due to reflex or direct stimulation of the vagus, and that while this action of the vagus is in itself a safeguard, it always shows that the anæsthetic has been administered with insufficient air. The Hyderabad Commission has proved that asphyxia is only dangerous in chloroform administration because it makes people gasp. Mr. Potter further asserts that asphyxia raises the blood-pressure, and that this is consequent on stimulation of the vaso-motor centre. The tracings of the experiments of the Hyderabad Commission demonstrate that, contrary to the hitherto accepted belief, asphyxia lowers the blood-pressure. This is in strict accordance with what common sense would lead us to expect. It is evident that to raise the blood-pressure is to benefit the organism, and it cannot be said that asphyxia is ever beneficial. Mr. Potter is in error in supposing that asphyxia stimulates the vaso-motor centre. It is more probable that it paralyses that centre and stimulates the respiratory centre. Chloroform, on the other hand, paralyses both centres. Fortunately, it affects the respiratory centre most deeply first, so that when danger of overdosing arises warnings are given by the respiration, whereby that danger can invariably be averted.

The most important result of the labours of the Hyderabad Chloroform Commission has undoubtedly been to establish the proof that chloroform has never, under any circumstances whatever, a direct action upon the human heart; and not the least important of the results of the Commission's work consists in the exposure of some of the sham physiology which has passed current as genuine for the last ten years. Not to speak of the condition of animals with the blood-pressure "minus," it is a wellnigh irreparable misfortune that a whole generation of our profession should have been taught such physiological untruth as that the normal action of the vagus nerve is to imperil and occasionally to destroy life; and it is degrading to reflect that one of the main uses to which this false knowledge has been applied in England since 1879 has been to throw dust in the eyes of the public, when coroners' inquests are held on the victims of chloroform administered in accordance with the erroneous principles advocated by the Glasgow Committee.—I am, Sirs, your obedient servant,

EDWARD LAWRIE, Surgeon-Major,
President, Hyderabad Chloroform Commission.

Hyderabad, Aug. 1890.

DEATH UNDER THE ADMINISTRATION OF ETHER.

To the Editors of THE LANCET.

SIRS,—I send you a few particulars of a recent death at the Wolverhampton and Staffordshire General Hospital from the administration of ether, in which the patient died of syncope, and not from failure of the respiratory function.

A young man aged twenty was admitted under Mr. Vincent Jackson on June 19th last. He was a miller by trade, and sought relief from a swelling at the upper and outer side of his left leg. He was a stout, flabby man, and rather anæmic. The swelling turned out to be a chronic abscess. Previously to this he had always been healthy. The abscess was opened soon after admission, under chloroform, and another, which appeared a few weeks later, was opened under nitrous oxide. In addition to these, two other abscesses were opened without an anæsthetic.

Last week it was found necessary to again place him under an anæsthetic, in order to scrape away some unhealthy granulations, and slit open a couple of sinuses. The house physician and assistant house surgeon were present. The house physician *pro tem.* (Mr. Bryett, M.B. Lond.) gave ether with a Clover's inhaler, and the ether was from the same bottle as that which had been successfully used for other patients. It was obtained from Robbins', Oxford-street, London. Deceased was not deeply under when I commenced and finished the operation, which only lasted two or three minutes. At no time was the ether on beyond the mark 3 on the inhaler. On telling the house physician I had finished the inhaler was put aside, and I commenced to dress the wound. After breathing normally several times deceased moaned, and then turned pale and ceased breathing. At the same time his pupils dilated. The tongue was at once drawn out with forceps, and artificial respiration begun. The chest was slapped with a wet towel, and hypodermic injections of ether and brandy administered. In addition a battery which was at hand was applied. Artificial respiration was kept up for forty minutes, but was of no avail. The post-mortem examination was made by Mr. Vincent Jackson, at the request of the coroner. There was a considerable layer of fat over the chest, and the muscles were paler than natural. Both lungs were healthy, but there were some old adhesions in the right pleural cavity. The heart was unduly covered with fat, especially at its apex. The right side was dilated and full of blood, the left empty and contracted. The walls of the right ventricle were thin. The valves were healthy. The heart muscle was very pale and soft. A small piece examined under the microscope showed marked fatty changes. The jury returned a verdict accordingly.

This case is interesting, first, because it is opposed to the

view that death from ether takes place from asphyxia; and, secondly, from its sudden fatal termination, without any previous warning.—I am, Sirs, yours faithfully,

ARTHUR H. W. HUNT, M.R.C.S. &c.,
Wolverhampton, Sept. 2nd, 1890. House Surgeon to the Hospital.

"VOYAGING FOR HEALTH."

To the Editors of THE LANCET.

SIRS,—It is very gratifying to find that the few considerations I addressed to the profession on this subject have met with such approval. The voyage described by Dr. Arthur J. Moss is certainly not one that any intelligent doctor would recommend to his patients. I have been down in the latitudes he describes, and I entirely agree with him as to the climatic conditions. It matters not whether in a steamship or a sailing vessel, the far south voyage to Australia and the return by the Cape Horn route is much too cold for ordinary health-seekers. Moreover, it is the Australian, not the New Zealand voyage, I recommend. Sailing ships going to New Zealand usually go far south, in order to clear the Tasmanian coasts. I am under the impression that very few of them go through Bass Straits to the north of Tasmania. To give some idea of the difference between the weather experienced in our course and that described by Dr. Moss, I will give a few extracts from my log for the outward voyage. Owing to the great strike at the docks last year, the *Sobraon* did not leave until the middle of October. The temperature the day after leaving Plymouth was 55° F. in the shade, and as every day we went farther south it rose gradually, until at the equator it stood at 82° F. On Nov. 14th, in 17° 10′ S., the sun was at its zenith; there was no shadow at midday, and the thermometer registered 80° F. The longitude of the Cape of Good Hope was passed on Nov. 30th in 40° 17′ S. The entry for that day is "Weather fine. In the Mozambique hot current. Temperature of sea water 65° F.; air 55°, moist." Hence to Australia the course was due east, or, as the sailors express it, "running down the Easting." The average latitude was 42° S.; sometimes the course was as high as 38° 40′ S., but only on one occasion did we get as far as 44° S. The average temperature from the Cape to Australia was 54° F., sometimes going up into the sixties, but only once did it fall to 49° F. The lowest latitude reached was on Dec. 20th, when off the Australian coast. My note for that day runs thus: "Lat. 44° 00′ S.; Long. 111° 12′ E. A beautiful warm day, sun hot, temperature of air 54° F., water 51° F., wind W.S.W. Day's run 270 miles. Gave ambulance lecture to passengers on deck."

On Christmas Day the weather was delightful. Divine service was held as usual on deck, and two days after, on the seventy-fifth day of our voyage, we arrived in Melbourne. On the homeward voyage between Australia and the Cape of Good Hope the course lay along the edge of the tropics; the sea was usually smooth, and there was no rain. The temperature was always over 60° F. A few boisterous days when "doubling" the Cape of Good Hope were the only bad weather on the voyage. From the Cape up to St. Helena is the finest piece of sailing in the world; the wind blows steadily from the south-east, and the sea is smooth. From St. Helena home the weather was as fine as it had been going out. It will be understood what a delightful time the homeward voyage was when I mention that most of the passengers wore light flannels from the time we left Australia until we arrived in the English Channel. If all sailing passenger ships were run on the same lines as the one in which Dr. Moss had his very unfortunate experience, I would most assuredly agree with him in his denunciations of them. No one but the strongest man ought to venture to sea under such circumstances. Some of the great drawbacks to voyaging for health in steamers have been so well insisted on by Dr. J. W. Keyworth in THE LANCET of August 23rd that I will not further allude to that subject. I will conclude this notice of the voyage I advocate for invalids by recommending that the medical adviser should not consider his duty done when he has prescribed for his patient a sea voyage. He should make inquiries as to the ship, the time of starting (which should be at the very latest October), and the course taken out and home. He should also advise his patient to seek professional aid in Australia to determine what part of that continent he ought to visit. As this latter is a very wide subject, I will only give a few general hints. A patient who leaves England in the early autumn, and goes by sailing ship, will probably arrive in Australia about Christmas, the middle of the southern summer. It is madness to remain more than a few days in Melbourne or any other large town. What I advise the passengers to do is to go up to the mountains or the high table-lands of New South Wales, which may be reached by either train or boat from Melbourne; to go across the Straits to Tasmania, where they will find a second Devonshire; or to go on to New Zealand. If they are going to return by sailing ship they will have about two months to spend. If they spend this time in the large towns the chances are that they will begin their homeward voyage much exhausted, and it will take them a considerable time to regain their lost strength; whereas if they are content to lead a quiet easy life "far from the madding crowd," they will be enhancing the value of their voyage.

In conclusion, permit me to say that I will gladly give any information in my power to any medical man who will address me in care of Messrs. Green and Co., 15, Fenchurch-avenue, E.C.

I am, Sirs, yours obediently,

HENRY M. DOYLE, M.R.C.S., L.R.C.P. Lond., L.S.A.,
Late House Physician and Receiving Room Surgeon at the London Hospital, and Medical Officer of the ship *Sobraon*.
August, 1890.

CHOLERA.

To the Editors of THE LANCET.

SIRS,—I do not profess to know the nature of the bacillus which generates cholera, nor do I consider, from a practical point of view, that it is of any moment whether it assumes the characteristics of a comma, semicolon, or full stop. The problem to be solved is certainly the prevention of the disease, and doubtless proper hygienic precautions will lessen the frequency of the outbreaks. For the present, it suffices to observe the predisposing causes and the most effective treatment. The love of speculation leads me, however, to opine, and not altogether without reason, that no matter how the virus may be generated, the dissemination is effected by means of the winds. The probability of this surmise is strengthened by the fact that birds desert a locality several days prior to the advent of cholera. This circumstance might be merely concomitant, but, if so, it is a coincidence oft-repeated and one of such reliability that on several occasions when in India I was enabled to predict the outbreak of cholera in a house several hours and on more occasions than one some days before its appearance.

A second speculative conception is that the poison may lie dormant in the system until some favourable condition ensues for its further development. A night's debauch, a fit of intoxication, excessive fatigue of any kind, mental anxiety, the eating of unwholesome meat or unripe fruit, all favour the development, though they do not actually produce the disease. Assuming the correctness of this theory, it is not difficult to understand the reason of a strong and apparently healthy man being suddenly prostrated by the disease. The poison is present in the system, but inert, and any act of over-exertion weakening the resisting power of the constitution, or an error in diet, causing irritation, will originate those conditions which are necessary for the development of the poison.

A third idea, supported by observation, is that the wave of cholera rises to a maximum of intensity, falling to a minimum, possibly to rise again, and subsequently to fall. The nearer the cases approach the maximum point the greater the fatality, and the further distant from it the larger the percentage of recoveries. The initial attacks are usually so mild as to be designated choleraic diarrhœa, the next series are moderately severe, the subsequent ones severe, very severe, and fatal, descending inversely to very severe, severe, moderately severe, and mild. Cases do terminate unfavourably which are not within the "fatal zone," owing to the patient's weakened constitution and other extraneous causes, one of the most common of which is opium poisoning. Unless a similarity exist between death from cholera and the symptoms of opium poisoning, I maintain that the mortality outside the fatal zone is mainly dependent on the administration of

that drug. The explanation which suggests itself to me, though perhaps not based on scientific reasoning, is that when once cholera is established absorption is more and more impaired, if not altogether retarded, so that the amount of opium accumulates, and that when recovery begins to take place, and the power of absorption is regained, the aggregate amount of opium acts as an overdose. Granting then the accuracy of this zone theory, the natural deduction is that treatment is of little use; but this is not so in practice, for though indisputably no appreciable benefit follows the administration of any particular drug, nevertheless remedies are beneficial in supporting the strength, allaying the nervous fear, relieving the pain, mitigating the severity of the symptoms, and correcting the predisposing causes.

A detailed account of a treatment which must vary under different circumstances would be of little interest, but a description of the main features will probably prove of use. At the very commencement of the disease, prior to any manifest evidence of collapse, a dose of opium in combination with castor oil or an astringent should be given; but *one and only one* dose, and not under any pretext whatsoever is any more to be given until convalescence is thoroughly established. Cold but not iced water, acidulated with vinegar or dilute sulphuric acid, should be given *ad libitum*, notwithstanding the fact that it is speedily vomited. To attempt to quench the craving for a long drink by small lumps of ice is heart-rending treatment, and merely substitutes retching for vomiting without the transient relief which follows the rejection of the fluid. The body should be enveloped in a wet sheet, or immersed in a soda bath, and the cramps relieved by constant kneading of the muscles, a process which is of greater efficacy than simple rubbing of the surface. Occasionally chloroform inhalation is imperative, but the administration should depend more on the frequency of recurrence than on the severity of the cramps. Tepid water in large quantities should be given by means of an enema, oftentimes repeated. In the early stage of the disease, and so long as the power of absorption is not quite arrested, food should be given frequently, and in very small quantities. Half a teaspoonful of equal parts of lime-water and milk—the latter is too heavy by itself—or the same quantity of chicken or beef-juice, also diluted, should be given every ten minutes during the day and night, increasing the quantity and diminishing the frequency as the patient's condition improves. Alcoholic stimulants are best avoided, though I have seen cold champagne, given a tumblerful at the time, prove grateful to the patient and apparently beneficial. The first symptom of convalescence is the presence in the bladder of a few drops of urine, which, if allowed to remain, soon become most ammoniacal. I consider this a most important guide to prognosis, for with ordinary care recovery is almost a certainty, unless, as I have already stated, large or repeated small doses of opium have previously been given. As soon, however, as the urine is detected (and I pass a catheter frequently to ascertain the progress of the case) the bladder should be repeatedly irrigated. Subsequent treatment consists of astringents and tonics. Food should still be sparingly allowed, and any restlessness controlled by small doses of henbane. The sequelæ of cholera require appropriate treatment.

I am, Sirs, yours obediently,

G. SHERMAN BIGG, F.R.C.S. Ed.,
Late Staff Surgeon, Allahabad, India.

Victoria-street, London, S.W., Sept. 1st, 1890.

"INTERNATIONAL CONSUMPTION OF MEAT."

To the Editors of THE LANCET.

SIRS,—Will you allow me to protest against the illogical reasoning of your correspondent, Mr. Yorke-Davies, in his letter anent "international meat consumption"? His attempt to attribute to the greater consumption of animal food in Australia and the United States an alleged superiority of these peoples in "go" and "energy," ignoring totally the many other more important factors which contribute towards the formation of racial characteristics, is extremely misleading. Are we then to believe that in the consumption of a larger quantity of animal albumens we hold the key to the striking difference, mental and physical, between a Chinaman who lives largely on rice and a beef-eating Australian or American? Were the ancient Romans, who conquered the known world, and the ancient Greeks, who astound us by their intellectual might, phenomenal meat consumers? I trow not, if the climatic conditions for existence were then as they exist now in Greece and Italy. Has your correspondent ever tried to eat large quantities of animal food during the sub-tropical heat of an Italian summer? Your correspondent instances the energy of a meat-eating Yorkshire labourer. How, then, does he explain the power for physical exertion in a Scotch farm labourer during harvest time, who lives almost solely on porridge? Correct dieting, as Mr. Yorke-Davies remarks, reduces obesity, but it does not follow that, because some unfortunate people possess an abnormal power of converting farinaceous food into fat, therefore a race which lives largely on such diet must become similarly afflicted, not to mention lacking in "energy" and "go." May it not be that the low rate of mortality in Queensland, which another of your correspondents, Dr. Drysdale, refers to, is due among other causes, not so much to the "abundant supply of digestible animal albumens" as to the fact that the food consumption is far more equally distributed amongst the population than is the case with us? Think also of the enormous differences in the conditions of life between a largely agricultural population like that of Queensland and the teeming millions of our smoke-haunted manufacturing towns.

I am, Sirs, yours faithfully,

Dartford, Aug. 30th, 1890. THOS. HENDERSON, M.B.

VERTICAL DISLOCATION OF THE PATELLA.

To the Editors of THE LANCET.

SIRS,—A few days after publishing my notes on a case of vertical dislocation of the patella, in THE LANCET of July 26th, my attention was called by a lay correspondent, who had read my case, to the following interesting narrative of what one would imagine was a similar case of injury; at all events, if not a "vertical" dislocation, it was evidently an *irreducible* one.

The story is narrated in the Chronicle of Jocelin, during the time of Abbot Hugo, of the Monastery at Bury St. Edmunds. The Latin context will be found in the Publications of the Camden Society. The following is a translation:—"It came into Hugo's mind to go to St. Thomas's to pray, and during his journey, near Rochester, he had a sad fall, so that the patella left its proper position and became fixed to part of the knee. The doctors met together and put him to great pain in various ways, but in vain. He was carried back to us in a horse-litter (or bier), most carefully attended, as became his position. Why should I say more? His leg mortified, the pain mounted to his heart, and a tertian fever supervened, in the fourth attack of which he died. And just before he expired his servants pilfered all his goods and chattels, so that nothing was left in the Abbot's house but tripods and tables, too heavy to carry off!"

I am, Sirs, yours faithfully,

EDWARD A. PIGGOTT, L.R.C.P. & S. Edin., &c.

Clare, Suffolk, Sept. 4th, 1890.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Notification of Disease.

ON the 1st inst. the Infectious Disease (Notification) Act, 1889, came into force in this city and port, this having been resolved upon at a special meeting of the City Council held on Jan. 8th last. Circulars giving full details and forms of certificates have been sent to all medical practitioners, and others to whom the Act refers. Speaking generally, it may be said that the Act is not viewed favourably by local medical practitioners. It is felt that the duties of the latter cease when they have certified that the disease is an infectious one, and that the actual notifying of the disease to the medical officer of health should be left to the householder. But now that the Act has become law there can, of course, be no doubt that it will be loyally regarded, and it only remains to be seen what the result will be. There have been some few cases of fever in a narrow, central street, but it has shown no tendency to spread. It will be specially interesting to observe how far

the notification of diseases will be successful as regards the shipping of the port.

Precautions against Cholera.

Such a maritime highway as Liverpool is peculiarly liable to the importation of cholera, and in the epidemics of 1848, 1858, and 1866 this city suffered severely. Since then there have been only a few isolated and more or less doubtful cases, a result probably due to the excellent sanitary arrangements. Where so many foreign vessels arrive with crews of proverbially dirty habits it is most important that a strict inspection should be maintained. Even British ships are by no means always models of cleanliness, and there is plenty of room for improvement even yet.

Liverpool, Sept. 3rd.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Stockton Hospital.

AT the annual meeting of the governors of the Stockton Hospital, it was stated that during the past year 357 in-patients had been treated, an increase of 84 on the previous year. The number of out-patients was 1597. In a few weeks the new wing, which would double the capacity of the hospital, would be ready for occupation. The financial condition of the hospital was satisfactory, and it was thought that the expenses of the new wing would be cleared off out of the balance of the general account.

Infectious Disease in Newcastle.

The medical officer of health reports a considerable amount of infectious disease existing in Newcastle, principally owing to enteric and scarlet fever, but there is also some diphtheria.

Sunderland.

The annual report of the medical officer of health for Sunderland has just been issued. In it Mr. A. E. Harris remarks as to the population of Sunderland—which in the middle of 1889 was estimated at 134,193—that it is difficult to say how far or how near to the actual figures this calculation may be. The estimate of the population in 1884 he thinks was erroneous, and that at that period there were many thousands more persons in the borough than the Registrar-General gave Sunderland credit for. Mr. Harris says that the prosperity of 1889 has caused the borough to be fully occupied, so that it was almost an impossibility to obtain a house or lodging for an artisan. The borough, he now says, is passing through a time similar to that of 1883 and 1884; its population is without doubt under-estimated, and the rates based upon it must of necessity be more or less misleading. Mr. Harris thinks that a census should be taken at a shorter period than ten years. The marriage rate of Sunderland for 1889 was per 1000 of population 21·6, whereas for England and Wales it was only 14·7. The birth-rate was equal to 36 per 1000 of the Registrar-General's estimate of the population. On the same estimate of population the death-rate was 22·82, which, he says, was 0·5 per 1000 higher than the mean rate of the preceding ten years, and this notwithstanding that some of the zymotics were below the average. Mr. Harris thinks that the jump in the mortality in Sunderland is largely due to infantile mortality. No less than 878 children died without attaining the age of twelve months, so that out of every 1000 children born in the year 181 died. "Here," Mr. Harris says, "is food for reflection for philanthropists." Why should nearly one-sixth of these infants in the borough have died? Is it the fault of early marriages, of ill feeding, of maternal neglect, of want, of drunken parents, of insanitary conditions, of ignorance, of unnecessary exposure, or of improper clothing? Mr. Harris answers these questions himself by saying he believes that the cause of death may be found among some one of these causes, and he laments that, while institutions exist in abundance to put down vice, to protect animals, to raise fallen women, and to set the repentant thief and blackguard on a career of honesty, nothing is done for the little ones who should be the first care of the human species.

Carlisle.

At a late meeting of the governors of the Cumberland Infirmary, the finances of that institution, which were not in a satisfactory condition, came up for consideration. It appeared that there was a debt of about £2000 on the hospital. This, it was explained, was to some extent chronic, but at least not more than it was two years ago. It was decided to try to influence employers to bring the matter before their workmen. The governors have before them the examples of Sunderland and Newcastle Infirmaries, and their condition now compared with that of a few years ago, before they were made free and popular with the working classes.

Fatality to a Cumberland Surgeon.

Dr. Ross, surgeon, in practice at Wetheral, near Carlisle, has died from injuries received by being thrown from his dog-cart when returning from visiting a patient near Dalston, Cumberland. He was on his way home accompanied by a friend, and in driving had to pass a sharp turn in the road, when, it appears, one of the wheels struck a stone projecting at the roadside, and here the vehicle was overturned and both were thrown out, the doctor's companion falling heavily upon him. His condition was found so serious that on his removal home (which was carefully conducted by Dr. Mitchell of Southwaite) a consultation was held, attended by Dr. Lediard, Mr. Lloyd, and Dr. Helm of Carlisle, soon joined by Mr. Page of Newcastle, when an abdominal section was performed and the bladder was found ruptured in two places, one tear being about two inches in length, and the other about one inch and a half, and at right angles to the first. Dr. Ross succumbed to these injuries the next day. He was about twenty-seven years of age and unmarried.

Death of Mr. Francis Green, Surgeon, of Settle.

I regret to note the death of Mr. Francis Green, of Settle, Yorks, which took place there on the 18th ult. Mr. Green, who was well known in Newcastle, went to Settle about twenty years ago, where his reputation and skill speedily brought him a large and lucrative practice. His health had been failing for some time.

Newcastle-on-Tyne, Sept. 4th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

The British Association.

AT a recent meeting of the subcommittee of the Lord Provost's Committee, a deputation was appointed to proceed to Leeds to the meeting of the British Association, to urge the claims of Edinburgh as the place of meeting for next year.

The Pleuro-pneumonia Act.

Principal Walley, of the Royal Veterinary College, has published a letter on the above subject. He says that at a meeting with Mr. Chaplin of representatives from local authorities, of which he was one, he pointed out what seemed to him the most salient defects in the draft bill. "Foremost amongst the objections urged was the roundabout way in which it was proposed to deal with cases, or suspected cases, of pleuro-pneumonia in the first instance, and that if the proposal were adopted in its entirety it would lead to much unnecessary delay in grappling with the enemy; and he ventured to express the opinion that every veterinary inspector should have full power to slaughter, and that without a moment's loss of time, every animal that came under his notice showing the symptoms of pleuro-pneumonia. Other points upon which he expressed a strong opinion were the desirability of making the notification of all forms of disease existing amongst their stocks compulsory on all owners of cattle; and that tuberculosis—so far as actually diseased animals were concerned—should be scheduled as a contagious disease." He regrets that on the first and last points his suggestions were not adopted, but his regret is modified by the fact that stockowners had to notify *any illness* affecting their cattle. He thinks one great blot on the proposed method of procedure, as on all past methods, is the failure to establish a system of registration of all herds and a thorough system of inspection in every district in which disease existed or was suspected. Further, he states that he drew attention to the laxity which existed in the removal of diseased animals for slaughter, these being often driven along public highways for long distances, to the manifest danger of cattle near these highways.

The Health Committee of the Edinburgh Town Council.

At the meeting of this committee last week, the estimates for the year from May 15th last to the same date in 1891

were adjusted. Last year they expended about £1600 over the amount estimated. For the current year their estimates amount to £10,925. The estimate for reporting infectious diseases is put down at £1000, and already £600 has been paid in fees for the three months of the current year which have already expired. The average daily number of patients in the City Hospital has increased from 74·4 in 1888 to 109·9 in 1889 and to 115 in 1890 so far as the year has gone. The increase is in considerable part due doubtless to the increased confidence felt in the institution by all classes, and consequently to a lessened opposition to the removal of infectious cases. The report on the health of the city for the month of August was also submitted. There were 329 deaths, the death-rate being 14·56 per 1000, which is about 1 per 1000 below the average of the preceding ten years. As regards age, 44·37 per cent. were under five and 25·22 per cent. were above sixty. Diseases of the chest amounted to 25·22 per cent., and zymotic diseases to 13·06 per cent. The latter included—1 case of typhoid, 3 cases of diphtheria, 8 of scarlatina, 4 of measles, 25 of whooping-cough, and 2 of erysipelas. During the month 207 cases of infectious disease were reported, nearly 90 less than in August of last year.

The Cleaning of Edinburgh.

The committee of the Town Council which has charge of the cleaning of the city estimate the outlay at nearly £1000 over last year. The public will hope that this increased outlay may imply greater attention to the state of the streets, for there is abundant room for improvement in this direction. As already noticed, a deputation has been appointed by the same body to visit various towns to ascertain the best method of disposing of the city refuse. Bailie Russell, who is the only medical man in the Council, has been added to it, so that it now consists of two bailies, two councillors, and the inspector of cleaning.

Edinburgh Water-supply.

For some time past there has been considerable discussion about the water-supply of the city and district, it being asserted by some that there is not sufficient reservoir accommodation, and therefore not a sufficient reserve in the event of an unusually rainless season, while others maintain that there is sufficient accommodation were waste checked. Last week, at a meeting of the Works Committee of the Water Trust, Mr. Hill, C.E., the engineer to the Manchester Corporation, and Mr. Gale, C.E., engineer to the Glasgow Corporation, were appointed advising engineers, and are asked to advise the committee on the whole question of the present supply, and its sufficiency under exceptional weather conditions, and under other circumstances referred to. They are also asked to report on the best methods for checking waste; and, further, which of the schemes referred to in the report should be adopted if the time had come for providing an additional supply. It is to be hoped that the report may be of such a nature that it will satisfy not only the corporation, but the public whom they represent.

Health of Edinburgh.

The death-rate a fortnight ago was at the rate of 12 per 1000. Out of a total of 60 deaths, diseases of the chest accounted for 18 and zymotic diseases for 5. The intimations for the week comprised 5 cases of typhoid, 2 of diphtheria, 24 of scarlatina, and 5 of measles. The mortality last week was at the rate of 14 per 1000. Out of a total of 75 deaths, diseases of the chest accounted for 22 and zymotic causes for 8, whooping-cough still being the most fatal of the latter class. The intimations for the week included 4 cases of typhoid, 7 of diphtheria, 17 of scarlatina, and 5 of measles.

At a meeting of the Council of the Queen Margaret College School of Medicine for Women, Glasgow, held on Friday, August 29th, John Lindsay Steven, M.D., was appointed Lecturer on Pathology.

Edinburgh, Sept. 8th.

LITERARY INTELLIGENCE. — Messrs. Longmans announce the early appearance of a "Text-book of Chemical Physiology," by Dr. W. D. Halliburton, Professor of Physiology, King's College; and "Elements of Materia Medica and Therapeutics," by C. E. Armand Semple, M.B. Cantab. Also, as in preparation, "Human Physiology," the substance of lectures delivered at St. Mary's Hospital by Dr. A. D. Waller.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

DUBLIN.

Science and Art Museum.

THE Science and Art Museum and the National Library situated in Kildare-street were recently formally opened by his Excellency the Lord-Lieutenant in the presence of a numerous and influential company. The foundation stone was laid on April 10th, 1885, by H.R.H. the Prince of Wales. The buildings are constructed of Irish granite faced with Mountcharles stone, and Portland stone where carving was required. We find on entering by the centre door the Rotunda, which has been likened to the Pantheon at Rome on a smaller scale. The mosaic is very beautiful, and in some portions of the Museum plants, flowers, birds, &c., are conventionally treated, the effect being very fine. The Rotunda is 60 ft. in diameter, and measures 76 ft. to the top of the dome. The Rotunda leads into the central court, which is a magnificent hall 125 ft. in length by 75 ft., lighted from the roof. The galleries are floored with oak in the herring-bone pattern. A collection of the original models of the works of the late J. H. Foley, the eminent Irish sculptor, occupies the central court. Off the main hall branch twenty rooms, those on the ground floor being devoted to collections illustrative of the arts and industries of Greece and Rome, of Egypt and Assyria, ethnography, musical instruments, Indian and Persian work, geology, and mineralogy. In one of the rooms on this floor is a relief map of Ireland in plaster, coloured to show the geology of the country, and drawn on a scale of one inch to the mile, the vertical scale being eleven inches to the mile, so as to represent the lesser heights. In this room there are several cases containing specimens of Irish ornamental rocks, principally granites, and miscellaneous specimens illustrative of special peculiarities of rock structure. In addition to the collection of the Royal Irish Academy, for which a home has been provided in the building, the Museum contains a large number of examples illustrative of early Irish and Scotch art. The buildings are heated on a new principle by hot water, and will be lighted by electricity. Messrs. T. N. Deane and Son are the architects, and Messrs. Beckett the contractors, the cost being about £122,000.

Death of Wensley Bond Jennings, F.K.Q.C.P.I., L.R.C.S.I.

Mr. Jennings, who had been in failing health for some time past, died at his residence, Milleen, Dalkey, county Dublin, on the 4th inst., in his seventy-first year. He held the post of visiting physician of South Dublin Workhouse for twenty-seven years, and only resigned last year, receiving a retiring allowance of £92 10s. yearly. Mr. Jennings was also for a considerable time medical attendant to Guinness' Brewery Dispensary. He obtained the Fellowship of the College of Physicians in 1861.

Health of Ireland during 1889.

The Registrar-General's annual report of births, deaths, and marriages for 1889 has only now been published, and why so unaccountably delayed it would be hard to explain, inasmuch as it has been in the hands of the authorities since July last. Why this return is not issued to the public by the second quarter of the year is a circumstance not easy to understand. The births registered last year were 107,841, and the deaths 82,908, both being below the average for the previous decade. The excess of births over deaths was counterbalanced by emigration, so that there was a decrease of 45,544 in the population during the year. Of the births, 2·8 per cent. were illegitimate, which, as the Registrar-General states, compares favourably with the returns from most other countries. The death-rate (17·5) was below the average (18·4) for the last ten years, and it is most satisfactory to find that there was a diminution in the deaths from zymotic diseases amounting to 1482, as compared with 1888. On the other hand, the death-rate among children is still seriously high.

Banquet to Surgeon Parke, A.M.D.

This gentleman was recently on a visit to a relative in the South of Ireland, and the opportunity was taken advantage of by his medical friends in Cork to entertain him to dinner. An influential committee was at once formed and the dinner took place a few days since at the Imperial

Hotel. The banquet was a great success, Dr. W. C. Townsend presiding as chairman, and Dr. N. J. Hobart as vice-chairman.

Accident to Dr. Moriarty of Cork.

Dr. Moriarty, Surgeon to Cork County Gaol, while driving in Leitrim-street, Cork, last week, was thrown to the ground, dislocating his knee.

The Pembroke Town Commissioners have adopted the Infectious Diseases Notification Act in their township.

The Corporation of Cork have granted a sum of £350 for the maintenance of Cork Fever Hospital for the half year.

Dublin, Sept. 9th.

BELFAST.

Medical Officer of Health for Belfast.

The post of medical officer of health for the city of Belfast is now vacant through the death of Mr. Samuel Browne. At a meeting of the Health Committee of the Town Council it was decided to send a circular to the corporations of several of the large English towns, inquiring as to the duties, salary, &c., of their medical officers of health. Already several candidates are in the field, and an active canvass is being made. The feeling of the medical profession in Belfast is that the corporation should give a good salary, so as to prevent the necessity of the holder of the appointment having to engage in general practice. Belfast is such a very rapidly growing city that the duties of medical officer of health would occupy all the time and attention of one man.

Queen's College.

The chair of Materia Medica has become vacant through the resignation of Dr. Seaton Reid, who had been professor since 1857. So far, I hear of only two candidates, Dr. John MacCormac and Dr. Whitla. This appointment is in the gift of the Crown.

Clonmel Water-supply and Sewerage.

Mr. Radford's scheme has been adopted by the town commissioners. By it the water will be brought from Glenmorgan, where there is a watershed of 1700 acres. Filter beds and a covered service reservoir will be situated on a hill near the town, and the gravitation main will deliver over half a million gallons a day at the reservoir. The cost will be £11,000. In the sewerage scheme new pipe sewers will be laid in every street, the sewage being brought down to the outfall works by gravitation. Here the sewage will be raised by duplicate gas engines and centrifugal pumps, and treated in tanks by chemical precipitation, followed by filtration in filter beds, the effluent being conveyed to the river Suir. The cost of this scheme is estimated at £8000.

Belfast, Sept. 9th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Action of Cannabis Indica on Dyspepsia.

CONTINUING his note on cannabis indica, reported in THE LANCET of Aug. 2nd, Professor Germain See recommended that the drug should be employed in the form of fatty extract, by doses of five centigrammes daily, taken in three portions. Beyond this dose the drug had a toxic effect, and the toxicity was manifested particularly by a state of ebriety. He had employed the medicine in two groups of diseases, the first comprising alterations in the chemical composition of the gastric juice, such as excess of hydrochloric acid, the most frequent of all the forms of dyspepsia; excess of organic acids (lactic and acetic); and, on the other hand, the cases of defective secretion of acid, which completed this sort of dyspeptic maladies. The second group related exclusively to the gastro-intestinal neuroses which occurred without any chemical modification of the gastric juice. He found that cannabis acted in such a manner as to mitigate the painful sensations and to re-establish the appetite, whatever might be the condition by which the pain and other phenomena were produced. If, however, they were dependent on hyperchlorhydria, it was indispensable to aid its action by the use of large doses of bicarbonate of soda given about four hours after the ingestion of food. Cannabis had no effect whatever on atony or dilatation of the stomach, which seldom yields, except perhaps to physical means, such as "lavage" of the stomach and hydrotherapy; it acted favourably on spasms of the stomach and on the vomitings of a nervo-motor order. It had no direct influence on the production of gases, but possessed a useful action on their elimination. Intestinal digestion was also amenable to the sedative action of cannabis. Professor See summarised the properties of cannabis as follows: It is a true sedative of the stomach, without having any of the inconveniences of narcotics, as opium and chloral; of absorbents, as bismuth; of general sedatives, as bromide of potassium; of paralgesiants, as antipyrin,—all of which have more or less markedly unfavourable effects on the digestive tract. The action of cannabis necessarily leads to its frequent use in combination with other drugs, such as alkalies in strong doses, certain purgatives, and more rarely antiseptics.

Dr. Dujardin-Beaumetz stated that he could not base his differentiation of chemical and of nervous dyspepsias on the presence or absence of free hydrochloric acid in the gastric juice.—Prof. Hayem asserted that he had already shown that it was an error to attribute the total acidity of the gastric juice to the quantity of free hydrochloric acid which it contained. In support of his opinion, he cited cases of 160 dyspeptic subjects in whom the chemical analysis of the gastric juice had been made in a thorough manner. Of these 160 patients, there were only six in whom the gastric chymism approached the normal; in all the others it differed very notably. He could not, therefore, admit that there existed dyspepsias exclusively nervous, and believed that there existed only chemical or mechanical dyspepsias.

Experiments made on an Executed Criminal.

On the morning of the 1st inst. a man was guillotined for having assassinated his mistress. Immediately after the execution the body of the culprit was removed to a dissecting-room, where Drs. Gley, Barbi, Couturier, and two military surgeons performed some very curious experiments, which may be found interesting. The beats of the heart were observed by Dr. Gley during more than six minutes, and some experiments were performed to demonstrate the independence of the ventricular and auricular contractions. It is asserted that this is the first time that such observations have been made on man. Dr. Gley then undertook a long research relative to the acidity of the different parts of the intestinal tract.

Death of Professor Gavarret.

I have to report the death of Professor Gavarret, which took place almost suddenly on the 2nd inst. at Valmont, where he was staying in the country house of his friend, Professor Lannelongue. He was eighty-one years of age, having been born in 1809. In 1829 he entered the Polytechnic School, which he left with the rank of sub-lieutenant of artillery, and entered the School of Application of the Artillery at Metz. But he soon left the army to devote himself to the study of medicine, without, however, abandoning the study of the exact sciences. In 1840 he published, in conjunction with Dr. Andral, the celebrated memoir "On the Blood and the Physical Organisation of Man." In 1841 he published "The General Principles of Medical Statistics" and many other works. In 1843 he was appointed to the chair of Medical Physics by "concours" at the Paris Faculty of Medicine. In 1878 Professor Gavarret was elected member of the Academy of Medicine, and in 1882 he was chosen President. He was Commander of the Legion of Honour, Honorary Inspector-General of the Faculties and Schools of Medicine, and held many other appointments. With Gavarret disappears the last of the professors of the Faculty of Medicine who obtained their chairs by competition.

Paris, Sept. 9th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Duration of Life in the Medical Profession.

IT is calculated, on the basis of statistics, that the average duration of the lives of medical men in Prussia, from the end of the thirtieth year onwards, is somewhat below that of the total male population of the country, though the latter includes a large number of decrepit and diseased persons, such as the nature of the medical profession excludes.

The Alvarenga Prizes.

The Hufeland Society in Berlin offers two prizes of 700 marks (i.e., shillings) each; one for a treatise on the

Influenza Epidemic of 1889–90, the other for one on the legal responsibility of the physician in the application of chloroform and other inhalation anæsthetics. The first must contain a history of previous influenza epidemics and of that in question, and an account of the causes, symptoms, and treatment of the latter and its sequelæ. The treatises must be sent to Professor Liebreich of Berlin before April 1st, 1891. These prizes are paid from the interest of a fund established by the Portuguese physician, Da Costa Alvarenga, who had studied in Berlin.

The Berlin Sewerage System.

The following facts concerning the Berlin sewerage system, which Virchow praised so highly in his opening address to the International Medical Congress, are communicated by Dr. Hobrecht, Municipal Councillor on Public Works. Berlin is divided into twelve radial systems, of which systems 1 to 7 have already been at work for some time. System 8 is in full course of construction, and will be at work in the course of this year. System 9 is also in course of construction. System 10 is almost finished. System 11 is still only a project, but system 12 will be finished in 1891, or at latest in 1892. The question whether and in what measure the sewerage system has improved the health of the population is answered by Dr. Hobrecht thus: "It is certain, and has been officially stated, that infectious diseases, especially typhus abdominalis, have decreased; it is probable, however, that in the present state of science no one is able to maintain that this is due to the sewerage system, while the time since the completion of the works has been too short to admit of an empirical inference in this direction. Hygiene, on the other hand, adheres to the principle that it is of importance to promote cleanliness in water, air, and soil. The sewerage system of Berlin has satisfied this demand in a degree partly attained in some other cities, wholly in none. No other city, however, of more than a million inhabitants can boast of the achievement that the water of the river that flows through it, especially if so small as the Spree, is clean, and that the same may be said of the water of the main ditch, which, after the removal of the suspended and dissolved impurities by irrigation and drainage, carries off the waste water of nearly half a million people."

Influenza.

I reported lately that influenza had broken out again with considerable virulence in Breslau, and the same phenomenon is now reported from Neutreptow, near Stettin. It appears mostly complicated by pneumonia.

Poisoning by Bromide of Ethyl.

Three cases of poisoning by bromide of ethyl have recently occurred here. Two of these cases were fatal. The dose in each case was only about twenty grammes (308 grains).

Professor Heidenhain.

Dr. Lothar Heidenhain, who has been appointed Professor of Surgery at Greifswald, is a nephew and pupil of the late famous surgeon, Richard von Volkmann. His first literary work, entitled "Arthrotomy and Arthrectomy," appeared in 1886, and is a faithful account of Volkmann's views on this branch of surgery. This work has been followed by reports of microscopic investigations of the local reappearance of cancer-tumours after the removal of cancerous mammary glands, observations on the value of chloroform in the preservation of anatomical preparations, &c.

The municipal authorities of Halle have resolved to invite the Society of German Naturalists and Physicians to hold their general meeting next year at Halle.

Dr. Heinrich Oidtmann, the most zealous of the German opponents of vaccination and author of numerous writings in defence of his opposition, died a few days ago at Linnich, near Aix-la-Chapelle.

An Exhibition for Popularly Intelligible Hygiene and Care of the Sick was opened at Stuttgart on the 6th inst.

Berlin, Sept. 9th.

CANADA.

(FROM A CORRESPONDENT.)

Toronto University.

THE result of the matriculation examinations was announced at a meeting of the Senate, held on Thursday, Aug. 7th. The present class of matriculants is the largest in the history of the University, numbering over 200. There were 10 per cent. of failures. Additions to the library are daily being received, and large numbers of cases remain as yet unopened, so rapidly have contributions arrived. The friends of the University will regret to hear that the by-law to grant $200,000 by the city, in lieu of $6000 paid annually, for the tract of land known as Queen's Park, was recently defeated by a large majority. The list of matriculants at Victoria, Queen's, and Trinity, as recently published, shows the continued progress of these institutions, the classes being large.

Vital Statistics.

The mortality statistics of the principal cities and towns of the Dominion for 1889 have just been issued by the Minister of Agriculture, consisting of a volume of 200 pages, printed in the dual languages, English and French. In the present volume changes have been made in the classification, the system being that established by the Registrar-General of England. The report is composed of eight tables. 1. Causes of death, arranged in classes, showing sex, civil conditions, age; also stillbirths. 2. Diseases in order of fatality, with religion &c. 3. Deaths of illegitimate children. 4. Ratio of mortality according to age. 5. Ratio of mortality according to classes of occupation. 6. Comparative mortality by months. 7. Comparative mortality from fifteen principal causes per 1000 of population. 8. Comparative mortality from fifteen principal causes per 1000 deaths. The report summarises the returns of twenty-eight cities and towns of the Dominion, with a total population of 884,920. The registered deaths were 18,235, or an annual rate of 20·6 per 1000 of the population, while the rates of the three largest cities were—Montreal, 29·56; Toronto, 13·25; Quebec, 31·13. The death-rate in the Province of Quebec does not compare at all favourably with that of the other provinces, as those places with the eight highest death-rates are the eight towns and cities of that province, ranging from Quebec 31·13 to St. John's P.Q. 22·36 per 1000. The lowest death-rate is reported from Galt, Ontario—namely, 9·99. During the year 3670 deaths were referred to the zymotic class, equal to an annual rate of 4·1 per 1000. A review of Table 6, giving the monthly mortality, shows the highest death-rate on the Pacific coast as occurring during the month of January, when, at Victoria, it was 1·91 per 1000; while the lowest was in October, 0·68. Coming eastward, we find in Winnipeg, Manitoba, the greatest mortality in July and August, the rate being 3·0 and 2·96 respectively, in large measure accounted for by the fact that we find registered 114 deaths due to diarrhœal affections. The corresponding months of 1888 also showed the highest rates of death for that year. During the cold weather of January and February the rate fell to 1·41, the lowest being recorded in November, 1·17. In the maritime provinces of Nova Scotia and New Brunswick the lowest death-rate is found in the fall months, for in Halifax it was 1·29 in October, and 1·01 during November in the city of St. John, where it reached the highest, 1·95, in February, while Halifax rate stood highest in September, 2·35 per 1000. The two most unhealthy months for 1888–89 in the largest city of the Dominion—Montreal, population 210,000—were June—death-rate, 1888, 3·16; 1889, 3·59; and July—death-rate, 1888, 4·04; 1889, 3·62; while in Toronto, population 178,000, the mortality was greatest in January—1·75 per 1000. In both cities the lowest rate was in the month of December, being 1·71 in Montreal and 0·86 in Toronto. A few items respecting the fatality of "lung diseases" and phthisis in the various provinces of our so-called very "cold country" may not be uninteresting. Following in tabular form will be found the town or city of each province, with the death-rate per 1000 of lung diseases and phthisis.

Lung Diseases.

Province.	Town or City.	Rate.
Quebec	Quebec	3·07
Manitoba	Winnipeg	2·54
New Brunswick ...	St. John	2·39
Nova Scotia	Halifax	2·19
Ontario	Hamilton	2·00
Prince Edward Island	Charlottetown	1·54
British Columbia ...	Victoria	1·45

Phthisis.

Province.	Town or City.	Rate.
Quebec	St. Hyacinth	3·37
New Brunswick ...	Fredricton	2 87
Prince Edward Island	Charlottetown	2 64
Nova Scotia	Halifax	2·43
Ontario	Belleville	2 43
British Columbia ...	Victoria	1·35
Manitoba	Winnipeg	1·25

The lowest death-rate under lung diseases was in Fredricton, N.B., and Galt, Ontario, being 0 82 in each place, while the smallest mortality from phthisis was in London, Ontario, where it was 1·08 per 1000. Table 3 gives the deaths of illegitimate children at 875; of this number 480 are returned from Montreal, explained in the introduction as due to there being a foundling hospital in that city accommodating infants from other places.

The Young Men's Christian Association in connexion with the two medical colleges of the city has just sent out its first missionary. The field to which he goes is Corea. A farewell meeting was tendered Dr. Hardie and his wife on Tuesday, Aug. 12th, which was largely attended by the medical men of the city.

Canada, Aug. 25th.

Obituary.

JAMES MATTHEWS DUNCAN, M.D., F.R.S.

THE death of Dr. Matthews Duncan at Baden-Baden on Sept. 1st, announced in THE LANCET of last week, must have been a surprise and a shock to our readers. He was so recently in our midst discharging his duties as a teacher, hospital physician, and practitioner, that it is difficult to realise we shall see him no more.

James Matthews Duncan was born in 1826 in the city of Aberdeen, where his father was engaged in commerce and shipping. He was educated in the grammar school under Dr. Melvin, known as a schoolmaster of great repute. When a mere youth he was entered at Marischal College, and in the course of time he took the degree of M.A. He began his medical studies in the same College, and we have often heard him dilate on the benefit he derived from the instruction of Professor MacGillivray, the well-known author of the "Natural History of Deeside." The love of observing the habits of animals which he imbibed from that naturalist he never lost, and one of his great pleasures, even to the end of his life, was, during the autumn holidays, to watch the birds, the ants, and other animals in the district where he was staying. The latter part of his student life was spent in Edinburgh and Paris, and then he returned to Aberdeen to take his degree of M.D.

It was, however, his residence in Edinburgh that formed the turning-point of his life and decided what branch of the profession he was to follow. He became a member of the class of midwifery in the University, then taught by the late Sir James Y. Simpson, and he obtained such high distinction in it that, after his graduation, he was appointed one of the private assistants to that eminent physician. Simpson was at that time engaged in his world-renowned inquiries into the action of ether, and in the search for some better anæsthetic. Duncan assisted him in his work, and tried experiments with various substances. From a statement made in the "Life of Sir Robert Christison" we learn that Duncan was the first person to be rendered insensible by chloroform. Simpson also, in a letter published in his "Memoirs," refers to the night on which Duncan, Keith, and himself tried it simultaneously, and were all "under the table" in a minute or two. All the world knows what has been the result of these experiments.

Shortly afterwards Duncan began practice in Edinburgh, and he very soon attained the confidence and friendship of Syme, Christison, Miller, and other leaders of the profession in that city. His activity during his Edinburgh life was untiring. He rapidly built up a large private practice. He became one of the physicians to the Royal Infirmary. He was greatly instrumental in founding the Royal Hospital for Sick Children, and for a time he was one of its physicians. He was elected a Fellow of the Royal College of Physicians, was chosen one of its Council, and during a period when medical politics ran high in Edinburgh his calm and solid judgment was of the greatest value in the administration of its affairs. He was also a member of the Royal Society of Edinburgh, the Medico-Chirurgical and the Obstetrical Societies, and took a frequent part in their proceedings. In 1853 he began a course of lectures on Midwifery in the Extra-mural School, which were soon recognised by the students as highly practical, but with their practical recommendations based upon a scientific foundation. Duncan's command both of French and German enabled him to keep himself on a level with all that was good in the professional literature in those languages, and his students got the benefit of his reading and thought.

But amidst all the distractions of a large midwifery practice, and of the work of the various public institutions to which he was attached, Duncan found time when in Edinburgh to do an amount of literary work which makes him one of the most prolific authors in his branch of the profession. Moreover, the work which he did was of so high an order that his reputation rapidly grew, so that he became a recognised authority over Europe and America in both the science and practice of obstetrics, and patients were attracted to Edinburgh from all parts to consult him.

On the death of Sir James Simpson in 1870, the profession both at home and abroad looked upon Duncan as the natural person to succeed to the chair of Midwifery, and his candidature was supported by an immense mass of evidence of his fitness. He was, however, much to the surprise of the profession and the public, passed over. Duncan was not a man to "wear his heart upon his sleeve" and to show his feelings openly, but there can be no doubt that he felt keenly the slight, for the bestowal of the chair would have been the proper crown to his professional work. When, therefore, the authorities of St. Bartholomew's Hospital a little time afterwards invited him to go to London to act as obstetric physician to the hospital and as lecturer on midwifery in the medical school, his mind was open to accept the call, and Edinburgh lost what London gained—a great physician.

The position which he took in London, and the impression which he produced there will now be stated in the words of one who first came under his influence as a pupil, and has since been much associated with him in practice.

When Dr. Matthews Duncan came to London he was in his prime, with a European reputation and the character for honour which was early stamped on him. He at once acquired a large practice, which soon became very large. He was trusted by the profession, who sought his help in consultation at once and in increasing numbers, and by the laity, who from the very highest were sure of all that learning, experience, and integrity could guarantee. He was a sort of referee for matters of difficulty in the profession, and was the centre and rallying point of all that was best in his department. Some five years before his death he gave up midwifery, except in consultation, only attending a few old patients. This was in accordance with the plan of his life. "I always said I should give up midwifery at sixty," he said, and added that he had done everything he had hoped for and at the time he intended. How few could say the same. His life was therefore in a sense complete. He was at his zenith, and neither he nor his friends had the grief of seeing his reputation decline. To have given place by simple years to younger men of the right sort would, we are sure, have been nothing but a pleasure to him; he was quite free from jealousy and meanness, and would have regarded such a succession as that of younger brothers or sons.

As an obstetric physician, it may be safely said that the position held by Dr. Matthews Duncan, both in the science and practice of his profession, was second to none, and this not only in his own, but in all countries. The latter half of the nineteenth century is rich in great names, but it cannot be said that any of them stand at a higher elevation than his. He was a worthy successor to William Hunter and Denman in England and to Naegeli in Germany. The amount of his work was immense. There is scarcely a subject in obstetric medicine on which he has not written and left his deep and characteristic mark. As Johnson said of Goldsmith, "Qui nullum fere scribendi genus non tetigit, nullum quod tetigit non ornavit," and in this case the epitaph is strictly true. His method was, in original work, to concentrate his energy for the time on a comparatively small part of a subject, and to avoid compilation or encyclopædic attempts. When the subject had been thus treated in a series of papers, their result might often be found summarised in a clinical lecture with wonderful

brevity and clearness. Among his larger works may be named that on "Fecundity, Fertility, and Sterility," a work of enormous difficulty, but treated with a grasp that never wavers, and which at once took its place as a standard work on the subject; his Gulstonian lectures on "Sterility," a further treatment of part of the same subject; his researches into puerperal mortality, for the determination of which he pursued all the mothers of Edinburgh and Glasgow for weeks and months during removals and disappearances, until he ascertained their ultimate fate. The result of this great work (the tables for the preparation of which he lately presented to the Obstetrical Society's Library) was to show that the mortality of childbirth was much larger than had been imagined. This work is now twenty years old, and, though we may reasonably believe that antiseptics have considerably lowered the mortality, these are still the only available statistics. Into two volumes—"Researches in Obstetrics and the Mechanism of Natural and Morbid Parturition"—he collected a large number of the smaller and highly important papers read mostly at the Edinburgh Obstetrical Society. The ripest fruits of his work are to be found in his Clinical Lectures, written without reference to books, but almost exhaustive of the medical side of diseases of women, both as to range of subjects and as to their treatment. A whole treatise in these admirable lectures is often contained in a short sentence, and no better or healthier work for the student and practitioner exists. The characters of his work are enormous erudition, great sense of proportion, and love of truth for its own sake. It is remarkable that a man holding the leading position in practice as an obstetric physician in the greatest city in the world should have had the time and the energy to produce work of this kind to the very end; and his example should be remembered.

In the midst of his great practice Dr. Duncan was often wearied, but never hurried; always ready to attend to the needs and questions and perplexities of those who sought him. His influence on original work in London has been great. Much of the best work in his department was suggested by him to others; very much owed its fertility to his great knowledge of his subject which enabled him to point out what was known, and what needed further work. If it be true, as has sometimes been said, that a great man proves his greatness as much by what he inspires and vivifies in others as by what he does himself, the title to greatness clearly belongs to him on this ground. In this capacity—that of the encourager and stimulator of work of the best kind—he will be sadly missed. May we hope that, in the language of the Georgics slightly altered from the original, "Pullulet ab radice ista densissima sylva." His feelings and methods in his department were distinctly medical, and he persistently and rightly set his face against the idea that all pelvic diseases required an operation. But surgical proceedings, even of the boldest kind, excited his warm interest if he thought that they were likely to prove of ultimate benefit. His position with regard to them was characteristically judicial: restless surgeons were not, he thought, to be too easily condemned; they did what they did at their own risk, indeed, and their own responsibility; but if they proved their position and justified their boldness by their results, he freely expressed his wonder and admiration, and regarded them as *franc-tireurs*, who might advance practice by their restless experiments. This was a different thing, in his opinion, from wanton recklessness, for which he had no patience.

It is astonishing how few things a man, who thought and spoke as strongly as he did, had to retract, and how this habit of suspending judgment till proof was forthcoming may be read in his works dealing with vexed and doubtful questions. His instincts, however, which were seldom wrong, led him to speak with great plainness of some departments of practice, such as that of the treatment of minor displacements, even before figures were forthcoming for him who ran to read. His life may be said to have been purely that of a student and practitioner. He had no hobbies; reading was his recreation even in his holidays. He read everything, remembered all he read, and could quote place and reference with the greatest ease. It was this which, among other things, enabled him to do the immense amount of work which he did. It was not necessary for him to read up a subject; it was there ready in his memory, thought over, digested, and ready for the occasion, only waiting a suitable case to call his energies forth to the supplying of a vacant place or correcting an erroneous idea.

His style was characteristic: strong and rugged, aiming at clearness rather than elegance, at accuracy rather than effect. This was like the appearance of the man himself. His presence and talk were like the bleak honesty of his native moors. As a physician, patients were sometimes disconcerted by these very qualities, which they did not expect to find in a "ladies' doctor"; but none in trouble failed to find a kind and sympathetic heart beneath his somewhat silent and sententious manner, and he was ever ready to help both with advice and money in time of need. With frivolity and charlatanry he had no patience, and such as possessed these faults found they had met in him with the wrong man. In his relations with patients and his fellow practitioners self-interest never came in. The interests of the patient were paramount.

In appearance Dr. Duncan was of middle height, powerfully built, with an upright, firm carriage. His head was massive; his face was generally impassive, but capable of great expression. His eyes were clear and reflected his moods. His voice, tinged with the accent of his birthplace, was grave and manly. His manner in lecturing was slow, direct, and impressive, and his hearers felt that he was filled with the importance of the subject. He lived in his family, had no clubs, many friends, few great friends, but to such what a great friend he was.

For many years past it was his habit to rent, during the months of August and September, a large house, usually in a picturesque part of his beloved Scotland, and there, surrounded by his large family, he and his bright and charming wife exercised a gracious and unostentatious hospitality. Relieved for a time from the cares of practice, he brimmed over with joke and story, or uttered shrewd comments on men and affairs, with suggestive talk based on his wide experience of life and a well-stocked memory.

By Dr. Duncan's death the department of obstetric medicine has suffered an irreparable loss in this country, and letters and telegrams received by his family from all classes of society testify to the effect which it has produced and the feeling of personal bereavement it has occasioned. In the words of the highest lady in the land, expressed in a deeply-sympathetic telegram to Mrs. Duncan, "the country and Europe at large have lost one of their most distinguished men, and one who will be sorely missed."

As might naturally be expected, Dr. Duncan was the recipient of many honours. The Universities of Edinburgh and Cambridge conferred upon him the degree of LL.D., the University of Dublin made him an honorary M.D., and the King and Queen's College of Physicians an honorary Fellow; he was also a Fellow both of the Royal Society and the Royal College of Physicians of London; he was nominated by the Crown as a member of the General Medical Council. He held the office of Examiner in Midwifery in succession to the Universities of London, Cambridge, and Oxford, and was an honorary member of the principal medical societies both at home and in America, Russia, Austria, Germany, and Norway.

Dr. Duncan married in 1860 Miss Jane Hart Hotchkis, a lady belonging to an English family settled in Dumfriesshire. He had in all thirteen children, nine of whom survive him.

The following account of his case has been given us by Dr. Aldren Turner of London, who was in attendance during the latter part of his illness in association with Dr. W. H. Gilbert of Baden-Baden. Dr. Matthews Duncan had been for some months in failing health, having suffered much from eczema of a gouty nature. In the early spring he had felt weak, but notwithstanding he commenced in May his usual summer course of lectures. He was unable, however, to undergo the strain, both of teaching and practice, and about the middle of June he discontinued his lectures. For some time past he had been under the care of Dr. Andrew, as he had been suffering from attacks resembling angina pectoris, and it was deemed advisable that he should seek relief at one of the German watering-places. Towards the end of July, accompanied by his wife and some of his family, he started for the Continent, and halted for a short time at Blankenberghe, in Belgium. Here the anginous attacks were frequent, but did not last long, nor were they very severe. After a journey which must have severely strained his already weak heart-muscle, he arrived at Baden-Baden on Aug. 7th. The attacks continued slight, but he was able to take a little exercise and

enjoyed the baths. After a week, indeed, his symptoms so much improved that he rejoiced in not having had an attack for twenty-four hours. On Sunday, Aug. 17th, he had a very severe seizure, being in extreme agony and danger for several hours. There was great difficulty in breathing, his pulse was feeble and flickering, and his whole cutaneous surface was bedewed with a cold perspiration. These severe attacks were repeated on the two following days, and on Aug. 20th his condition was such as to cause great anxiety. The first sound of the heart was feeble, and the pulse was rapid and intermittent; the respirations were hurried, and were associated with œdema of both bases, cutaneous œdema over the ankles, sacrum, and chest, and the urine contained a small quantity of albumen. There was great prostration, combined with a distressing restlessness and inability to sleep. Suitable treatment was adopted, and towards the end of the week his condition had very much improved. There had been no return of the severe paroxysms, although the slighter forms still persisted. The heart had recovered its tone to some extent, and his appetite was good. During the next week convalescence proceeded apace, so much so that Dr. Muirhead of Edinburgh, who came over from Wiesbaden to see him, recommended that he might be taken back to London during the following week. Every preparation for the journey had accordingly been made, when, on Monday, Sept. 1st, as he was sitting quietly in bed towards the late afternoon, a loud snoring respiration was suddenly heard, and his death was instantaneous.

He was buried in the cemetery at Finchley on Sept. 8th. The Queen commanded Dr. Quain to represent her at the funeral. Sir Henry Acland, Sir Risdon Bennett, Sir Henry Pitman, Dr. Broadbent, and many other Fellows and Members of the College of Physicians, were present; whilst St. Bartholomew's Hospital was represented by the treasurer, Sir William Savory, Dr. Andrews, Mr. Thomas Smith, and most of the other members of the staff, together with sisters and nurses. The Obstetrical Society was represented by Dr. John Williams and Dr. Champneys. Sir William Turner, Dr. Littlejohn, and Dr. Muirhead of Edinburgh were there, and Professor Ogston and other friends from Aberdeen. Numerous relatives and private friends were also present.

MR. THOMAS PRINCE, M.R.C.S.

THIS gentleman, formerly of Balsham, Cambridgeshire, but more recently of Dorking, died at his residence in the latter town on Aug. 20th, in his eighty-first year, sincerely and affectionately regretted by all who knew him. Mr. Prince, who was born at Balsham in 1809, belonged to a medical family of some generations' standing, being son of the late John Prince, a doctor of the same place, and grandson of Thomas Prince, a well-known practitioner for many years in Cambridge. He studied his profession under Abernethy and Sir Wm. Lawrence at St. Bartholomew's as early as 1826, and afterwards practised at Balsham for nearly half a century. Retiring from practice on the death of his wife in 1878, he resided from 1880 at Dorking. His eldest son, who also followed the traditions of the family by becoming a member of the medical profession, died before him in 1884.

Mr. Prince was a man of striking presence and strong personality, with a most winning charm and geniality of manner. His ability as a general practitioner was so fully recognised that his advice was sought far beyond the limits of his own neighbourhood. Strong, vigorous, and manly, he was more hale and active in his eightieth year than many men of middle age. A well-spent life preserved his robust faculties intact to the last, and his simplicity of life and habits recalled to the end the best and happiest traditions of the beginning of the century. The profession has lost in him a hardworking, industrious, and enlightened member, and his family and friends an exceptionally lovable and beautiful character.

JAMES LAING, M.D. ABERD.

PERTHSHIRE has just lost an able and accomplished practitioner in Dr. James Laing, who died at Bridge of Earn on the morning of the 1st inst. Dr. Laing studied at Edinburgh University and at the Royal College of Surgeons of that city, taking his diploma of Licentiate in Surgery in 1839. In the following year he became assistant to his uncle, Dr. Chalmers, who had practised in the Bridge of Earn district for wellnigh half a century. The *clientèle* was extended by Dr. Laing, and he became the family physician to the houses of Kinnoull, Moncreiffe, and Kilgraston, a connexion he retained for many years. In addition to his wide general practice he held the appointment of medical officer to the parishes of Rhynd, Forgundenny, and Dron, but was chiefly engaged as consultant at Pitkeathly Wells, Bridge of Earn, where his caution and skill and pleasant manner contributed greatly to the attractiveness of the place for invalids, many of whom, after benefiting by his advice, remained his staunch friends.

In 1852 Dr. Laing received the diploma of M.D. from Marischal College, Aberdeen. By this time he had risen to be one of the most respected and popular practitioners in the north, and exerted his influence with all classes for the common good, particularly for the welfare, moral and physical, of the poor. Bridge of Earn owes much to him, not in medical practice only, and will long cherish his memory with gratitude for the cordial self-sacrifice with which he threw himself into every project for the good of the district and its people. For ten years his eldest son, Dr. Henry Laing, acted as his assistant, a post to which his youngest son, Dr. James Begbie Laing, succeeded.

Medical News.

NEW METROPOLITAN PARKS.—Under the statute which has just become law important powers are conferred upon the London County Council in respect to public parks and recreation grounds under their control. Provision is also made for the erection by the Council of mortuaries for unidentified bodies, and powers are given as to artisans' tenements, new building regulations, and water-supply within their authority.

ST. JOHN AMBULANCE ASSOCIATION.—Mr. W. G. H. Duncan has been appointed honorary secretary to the Ceylon Centre of this Association; and Surgeon Lees Hall, A.M.S., in view of the services he has rendered to the movement, has been asked to allow his name to be brought before H.R.H. the Grand Prior and the Chapter-general for selection, in order that it may be submitted to Her Majesty for approval, with a view of his being enrolled as an honorary associate of that order.

IRVINE AND THE NOTIFICATION ACT.—The Notification of Diseases Act having come into operation this month at Irvine, Dr. Wilson, burgh medical officer, in accordance with intimation on Saturday evening last, ordered the removal to the hospital of a girl eleven years of age, who was suffering from fever in the house of her father, a labourer. The sanitary inspector, accompanied by a hospital attendant, went to the house in the ambulance waggon to remove the patient, but the parents stoutly resisted the attempt. All the efforts of the authorities failed to effect the removal of the child, and the men were compelled to retire without accomplishing their object. A sheriff's warrant for removal may require to be obtained. The episode caused much excitement in the neighbourhood.

SANITARY INSPECTORS' CONFERENCE AT YARMOUTH. The annual summer meeting of this Association was held on Saturday, the 6th inst., at Yarmouth. The members were cordially received by the Mayor, who expressed his pleasure in receiving so important a deputation. Mr. Alexander Hugh, Chairman of the Council, thanked the Mayor on behalf of the Association, and proceeded to recount the objects of the body. Dr. Bately read some Historical Notes on Sanitation in Yarmouth, and pointed out that where Yarmouth now stands the waves of the Ocean had rolled for ages. After detailing in an interesting manner the early condition of the town, he said, on Oct. 6th, 1598, an Act was passed ordaining "that the alderman and every ward should appoint a scavenger for weekly cleansing the gutters, drains, &c., and each alderman, with three or four of the chief housekeepers to assess the ward with a weekly rate to defray the expense, and if any refuse payment the constable to seize their goods and sell them. The alderman to appoint carters for carrying away the muck, and any refusing to cart it to be imprisoned." He gave an account of the present sanitary arrangements which have done so much to make Yarmouth one of the healthiest towns in England. It was added that the system of using sea water for flushing purposes has also been adopted at Bournemouth.

OUTBREAK OF TYPHUS IN GERMANY.—It is reported that typhus fever has broken out in the district of Rybuik, Upper Silesia, and twenty persons are suffering from the malady on the large estate of Modlisszevko, in the province of Posen.

HOSPITAL SATURDAY AT BRIGHTON.—The result of the collection in aid of the medical charities was submitted at a crowded meeting held at the Pavilion, when the Mayor (Alderman Mainwaring) presided. The Mayor expressed his satisfaction with the result of the day's work, and referred to the total amount which had been received up to the period of the meeting as £1016 4*s.* 3*d.* Several returns had not been received, but he thought that the meeting had cause to be satisfied with the result of their endeavours. About 380 ladies had been engaged in collecting that amount, and the Mayor had estimated that the weight of the copper coins received amounted to about a quarter of a ton.

SHEFFIELD GENERAL INFIRMARY.—At the annual meeting of the governors of this institution the secretary announced that the expenditure of the past twelve months had exceeded the income by £1547 15*s.* 3*d.*, attributable mainly to sanitary alterations and the renewal of 106 worn-out bedsteads. The board had to deplore the death of Dr. Bartolomé, who had been connected for forty-three years with the infirmary. Mr. John Marshall, the chairman, moved the adoption of the report, and, after alluding to the various losses the hospital had sustained in the deaths of many of its active supporters, expressed a hope that the general public would continue to give their support to the institution.

LEAD POISONING IN THE WEST RIDING.—The town clerk of Bradford (Mr. McGowen), in reply to a complaint by Mr. Forsyth, the medical officer of Drighlington, takes objection to the statement that lead arises from the use of the Bradford water, and attributes the condition to the want of proper care on the part of the consumers, and possibly from the board not sufficiently flushing the mains. Dr. Hector (Drighlington) quotes eighty-six cases of lead poisoning in persons living at some distance from the main road, and supplied by a considerable length of service pipe. He advocated absolute abstention from the Bradford water and the substitution of well or spring water.

DEATH UNDER CHLOROFORM.—On Saturday last Mr. Wynne Baxter held an inquest at the London Hospital concerning the death of a man aged fifty-one, who was admitted into the institution suffering from abscess of the thigh and an affection of the spine. On Aug. 23rd an operation became necessary, and was quite successful, chloroform having been administered. On the 3rd inst. it became necessary to probe the abscess, for which chloroform was again given; but, according to the report before us, death ensued before the patient was fully anæsthetised. Mr. Andrew Smith, the house surgeon, stated that at the necropsy the heart was found healthy, though poorly nourished; whilst the lungs were not in the least affected. The jury returned a verdict of "Accidental death."

ACCUMULATING FUNDS.—An arrangement has just been made by the Treasury with the Bank of England which will greatly facilitate the accumulation of small trust funds. Heretofore it has been a great inconvenience to trustees who are charged to allow small funds to grow by accumulation of interest during the minority of infant beneficiaries, for example, to have to draw and reinvest the dividends amounting to no more than a few pounds at a time. This duty will henceforth be undertaken by the Bank of England at a cost for brokerage of one penny in the pound, and the holder of stock who desires to reinvest his income as it comes due will be able to give a general instruction to the Bank, which will ensure the automatic carrying out of his desires without further interference on his part. The intervention of the Bank is limited to funds not exceeding £1000 in amount, so that the new rule will not constitute any appreciable invasion upon the stockbroker's province, but it will greatly simplify and facilitate in these small transactions the process, at present disproportionately troublesome, of accumulating a small fund the subject matter of reversionary interests.

METROPOLITAN ASYLUMS BOARD.

Return of Patients remaining in the several Fever Hospitals of the Board at midnight on September 9th, 1890.

Hospital.	Beds occupied.						Total accommodation.
	Scarlet fever.	Diphtheria.	Typhus fever.	Enteric fever.	Other diseases.	Total.	
Eastern Hospital	270	42	..	55	3	370	442
North-Western Hospital	293	31	..	19	1	344	415
Western "	124	8	..	10	1	143	262
South-Western "	160	..	..	..	..	160	340
South-Eastern "	222*	21	1	32	2	278	464
Northern "	414	20	..	..	..	434	480
Totals	1483	122	1	116	7	1729	2401

SMALL-POX.—*Atlas* hospital ship, 1.
* 1 infant with mother.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

CARRINGTON, GEORGE HEDWIG, M.R.C.S., L.S.A., has been appointed Medical Officer for the Fylingdales District of the Whitby Union.

COCHRANE, JOHN, L.R.C.P., L.R.C.S. Edin., has been appointed Certifying Factory Surgeon for Kirkcowan District, Wigtownshire.

CUNNINGHAM, C. L., M.R.C.S., L.S.A., L.M., has been appointed Port Medical Sanitary Officer to Newhaven, vice Dr. Fussell, resigned.

GOODWYN, ALFRED HUNTER, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glas., has been appointed Medical Officer for the Droxford District and Workhouse, Droxford Union.

HABBIJAM, ERNEST THOMAS, L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer at the Infirmary, Wandsworth and Clapham Union.

HENDRICKS, CECIL MORGAN, M.B. Durh., M.R.C.S., has been appointed Medical Officer for the Stoke Lyne District of the Bicester Union.

HENRY, JOSEPH, L.R.C.P. Lond., L.R.C.S. Irel., has been appointed Certifying Officer for the Vaccination Districts of Wellington, Featherstonhaugh, Greytown, Masterton, Castlepoint, Carterton, and Otaki, New Zealand, vice Johnston, resigned.

HICKS, J. ABERNETHY, jun., L.R.C.P. Lond., M.R.C.S., L.S.A., has been appointed Third Assistant Medical Officer to the Whittingham County Asylum, Preston, Lancashire.

HOLDEN, GEO. HERBERT ROSE, M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Surgical Officer to the General Hospital, Birmingham, vice Geo. Heaton, M.A., M.B. Oxon., &c., resigned.

HUMBLE, GEORGE A., M.D., M.R.C.P. Lond., has been appointed Consulting Physician to the General Hospital of the Rio Negro, Patagones, Argentine Republic, South America.

JOHNSON, SAMUEL EBENEZER, L.R.C.S. Edin., L.S.A., has been re-appointed Medical Officer for the Balsall-heath and Moseley Districts of the King's Norton Union.

LAKE, W. W., M.R.C.S., L.S.A., has been appointed Medical Officer for the Seventh District of the Depwade Union, vice G. B. Masson, resigned.

LARKIN, FREDERIC CHARLES, M.R.C.S., L.S.A., has been appointed Honorary Surgeon to the Stanley Hospital, Liverpool, vice J. K. Smith.

MACKENZIE, WILLIAM, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the C District of the Thrapstone Union, vice J. Crew.

MURPHY, W. E. C., M.B., B.Ch. Univ. Dub., has been appointed Medical Officer of Health to the Urban Sanitary Districts of Llanfrechfa Upper and Llanvihangel-Llantarnam.

NOWLAN, F. B., B.A., M.B., Bac. Surg., B.A.O. Univ. Dub., has been appointed Medical Officer of Balbriggan Dispensary District, Medical Officer of Health, Certifying Factory Surgeon, and Medical Attendant to Constabulary and Coastguards, vice Dr. E. W. Adrien, deceased.

RATTRAY, ALEXANDER, M.D., L.R.C.S. Edin., L.S.A., has been appointed Medical Officer for the Blankney District of the Sleaford Union, vice M. Thompson, resigned.

ROBERTS, EDWARD, M.R.C.S., has been appointed Assistant Surgeon to the Royal Eye Hospital, Manchester.

ROWBOTHAM, ARTHUR JOSEPH, M.R.C.S., has been appointed Medical Officer for the Newton-on-Trent District of the Gainsborough Union; also Medical Officer for the Clifton District of the Newark Union, vice E. A. Phillips, resigned.

SUFFERN, A. C., M.D., M.Ch., has been appointed Medical Superintendent of the Rubery Hill Asylum, vice Thomas Lyle, resigned.

TAYLOR, GEORGE HENRY, L.R.C.P., L.R.C.S. Edin., has been appointed Visiting Surgeon and Dispenser to the Trial Bay Prison, New South Wales.

WINSHIP, WM. ALGERNON, M.R.C.S., L.S.A., has been appointed Medical Officer for the Alwinton and Elsdon Districts of the Rothbury Union.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement.

ANDERSON'S COLLEGE, Glasgow.—The Governors invite candidates for the Chair of Physiology vacant by the resignation of Professor Christie.

BARNET.—Medical Officer of Health. Salary £406 per annum (to cover and include travelling expenses). No private practice will be permitted.

BETHLEM HOSPITAL.—Two Clinical Assistants for six months. Apartments, rations, and attendance.

BIRMINGHAM GENERAL HOSPITAL.—Assistant House Surgeon for six months. Board, lodging, and washing.

BOLTON INFIRMARY.—Junior House Surgeon. Salary £100 per annum.

CLAYTON HOSPITAL, Wakefield.—House Surgeon; salary £90 per annum, with board, lodging, and washing. Also Junior House Surgeon, registered and unmarried; £25 per annum with board, lodging, and washing.

FLINTSHIRE DISPENSARY.—House Surgeon. Salary £100 per annum, with furnished house, coal, and lighting. Welshman.

HANTS COUNTY HOSPITAL.—House Surgeon. £100 per annum, with board, lodging, and washing.

HOSPITAL FOR WOMEN.—Two Clinical Assistants. Open to students after their fourth year.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £40 per annum, with board, lodging, and washing.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £50 per annum, with board and lodging.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House Surgeon for six months. Board and lodging.

NORTH-WEST LONDON HOSPITAL, Kentish-town-road.—Assistant Physician.

ROYAL FREE HOSPITAL, Gray's-inn-road.—Junior Resident Medical Officer for six months. Board and residence in the Hospital.

ST. PETER'S HOSPITAL FOR STONE AND URINARY DISEASES, Henrietta-street, Covent-garden.—House Surgeon for six months. Honorarium 25 guineas, with board, lodging, and washing.

WEST BROMWICH HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

WORCESTER COUNTY LUNATIC ASYLUM.—A Third Assistant Medical Officer. Salary £100 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

CARTER.—On Sept. 1st, at Albany-road, Bexhill-on-Sea, the wife of Albert Carter, M.D., of a daughter.

COCKELL.—On Sept. 2nd, at Forest-road, Dalston, the wife of Fredk. E. Cockell, jun., M.R.C.S., of a daughter.

COOPER-KEY.—On Sept. 9th, at Wilton-place, Belgrave-square, the wife of Dr. A. Cooper-Key, M.R.C.P., of a son.

DEIGHTON.—On Sept. 9th, at St. Bernard's, Hills-road, Cambridge, the wife of Frederick Deighton, M.B., of a daughter.

KIDD.—On Sept. 1st, at Merrion-square, Dublin, the wife of George H. Kidd, Esq., M.D., F.R.C.S.I., of a daughter.

THOMAS.—On Aug. 29th, at Roslyn, Camborne, Cornwall, the wife of J. Telfer Thomas, L.R.C.P., M.R.C.S., of a daughter.

MARRIAGES.

CHALLIS—TIBBEY.—On Sept. 8th, at Christ Church, Marylebone, Harry Thornton Challis, M.R.C.S. & L.R.C.P., only son of H. J. Challis, of Trinity-square, E.C., and Hackney, to Emma Augusta, only daughter of Geo. Tibbey, of Maryborough, Queensland, Australia.

PALMER—WILD.—On Sept. 1st, at the Parish Church of St. Marylebone, by the Rev. E. Raven Hollings, John Irwin, of 47, Queen Anne-street, Cavendish-square, eldest son of the late John Palmer, of Eliot-place, Blackheath, to Alice Scott, only daughter of the late Charles Wild, of Suffolk Lodge, Hampton Wick.

POCOCK—GEORGE.—On Sept. 3rd, at St. Andrew's Church, Kirton-in-Lindsey, Alfred George Clark Pocock, M.R.C.S., youngest son of William Pocock, M.D., of Streatham, to Helen George, second daughter of C. F. George, M.R.C.S., of Kirton-in-Lindsey, Lincolnshire.

DEATHS.

BLACKMORE.—On Sept. 4th, at Byrom House, Quay-street, Manchester, Alfred Blackmore, M.R.C.S.

BROWNE.—On Aug. 26th, at Strandtown, Belfast, Samuel Browne, M.K.Q.C.P. Irel., M.R.C.S., aged 81.

CHALMERS.—On Sept. 4th, at Pollok-street, Glasgow, Robert Chalmers, L.F.P.S. Glas., L.S.A., aged 47.

DUNCAN.—On Sept. 1st, at Baden Baden, suddenly, James Matthews Duncan, Esq., M.D., LL.D., F.R.S., of Brook-street, Grosvenor-square, aged 64.

GREEN.—On Aug. 25th, at Settle, Francis Green, M.D., L.R.C.P.

OKE.—On Sept. 5th, at Cumberland House, Southampton, Robert Rouby Oke, M.R.C.S., aged 75.

POOLEY.—On Sept. 3rd, at Northumberland Lodge, Cheltenham, Charles Pooley, F.R.C.S., F.S.A., &c. (late of Weston-super-Mare), in his 74th year.

ROSS.—On Aug. 27th, at Wetheral, John Ross, M.B., C.M. Edin.

WEBB.—On Aug. 27th, at Wirksworth, Derbyshire, William Webb, M.D., F.R.C.S.E., J.P.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 11th, 1890.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Sept. 5	30·35	W.	61	59	108	78	58	..	Foggy
,, 6	30·37	N.W.	62	59	95	75	57	..	Foggy
,, 7	30·47	E.	57	55	98	73	55	..	Fine
,, 8	30·49	S.E.	57	55	107	75	53	..	Foggy
,, 9	30·34	S.W.	56	55	96	75	54	..	Overcast
,, 10	30·20	S.W.	59	56	104	78	54	..	Foggy
,, 11	30·19	N.	61	55	109	74	55	..	Bright

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET to be addressed "To the Publisher."

We cannot undertake to return MSS. not used.

THE STUDENTS' NUMBER.

Royal College of Surgeons, Ireland.—Notification has now been made to us that the Ledwich and Carmichael Schools, referred to separately in our Students' Number, have been merged in the Royal College of Surgeons, Ireland. The prospectus has not yet been published.

Charing-cross Medical School.—We are informed that the lectureship in medicine at this school, vacant by the death of Dr. Pollock, will be filled by J. Mitchell Bruce, M.A., M.D., F.R.C.P., who will also continue to lecture on therapeutics in the summer. H. F. Waterhouse M.D., M.Ch. Ed., F.R.C.S., has been appointed demonstrator of anatomy in this hospital.

W. E. Grigsby, LL.D.—Our correspondent's second letter has been duly received. We have made inquiries, and learn that it is customary in a case such as he describes to submit to the Company the facts as he states them to us, and that the Company usually reconsiders the application, probably by the light of a fresh examination. We think that he would be wise to follow this course.

Mr. A. J. Burgess is referred to an article on the subject in our present number.

TRANCE FOLLOWING INFLUENZA.

To the Editors of THE LANCET.

SIRS,—The case reported by Dr. Nathan Raw in THE LANCET of Aug. 16th gives me the opportunity of briefly relating the following.

A lad aged sixteen years, who had always been healthy, contracted influenza towards the end of January. He was not then under my treatment, but was nursed in bed for a day or two. Having to attend to his duties as under-groom, he went to his work before the influenza had quite passed off. After a week's illness he was sent home, when he came under my care, suffering from mental derangement with continual delirium by day. He threw an infant on the ground, attacked a child with a poker, and ran about the house half dressed; but at night he rested well without an anodyne. Aperients were administered, and he was carefully watched. In ten days' time his mind and recollection returned, and he went back to his place.

I am, Sirs, yours truly,

Staines, Sept. 10th, 1890. HENRY APPLETON.

J. R. W.—We fear there exists no source of complete information of the kind required. A visit to the British Museum or application to the secretaries of the various hospitals might result in partial success.

W. H.—We have on more than one occasion raised such a protest as our correspondent suggests.

Medicus is referred to the article on Text-books in our last issue.

Dr. Sainsbury.—The notice appears on p. 516.

Deltoid.—"Physician and Surgeon."

RESISTANCE OF THE RED CORPUSCLES TO ELECTRIC DISCHARGES.

DR. LAKER of Gratz has introduced a novel method for the physical examination of blood. He repeatedly discharges the electricity of a Leyden jar through a capillary tube containing a drop of blood, and notes the number of discharges which suffices to cause the blood to assume a crimson-lake colour, comparing it with the number required to produce the same effect in healthy blood. He thus determines the specific resistance of the red corpuscles to electric discharges.

Nuntius.—We think a protest should be lodged with the editor of the paper against the practice of which our correspondent justly complains.

Dr. W. Sheppard (Liverpool).—We should give the preference to B.

Asthma should consult his medical attendant.

A HINT TO CANDIDATES FOR THE SERVICES.

To the Editors of THE LANCET.

SIRS,—That others may be forewarned, let them hearken to the following. I read for three months to get a surgeoncy in the army, and read hard, for the average scoring in the winning list looked high. It only looks so, however, and is due solely to the enormously high rate of marking. Sound in wind and limb, I was sure of a favourable verdict from the medical board. All went well till the sight testing. As my vision has never troubled me or necessitated the wearing of a glass in my life, judge, then, my amazement at being pronounced physically unfit because, forsooth, I could not read Snellen's smaller type at twenty feet with the right eye alone in any but a good light. I read it easily with the left eye alone, and still more easily with both. I was given a rest and another trial, but all to no purpose. As a last chance, I appealed to the fountain head, who murmured mildly something about the goodly number of candidates, and lame ducks not being wanted. Representing that the right eye was the lame duck in my case, it was glanced at in a kindly-old-lady-like way, pronounced as looking a little weak (well it might after the testing with a dozen or so different glasses), and the chance of competing hopeless. Within half an hour my eyes were carefully examined at an ophthalmic hospital, with the following result:—Left, emmetropic; right, congenital myopic astigmatism; both structurally sound, and vision, with left alone or when both were used, practically perfect. Now, in the name of all that is logical, do men ever go to work with one eye shut and the other open? On peculiar occasions of policy I admit the trick with some is possible of performance. But do men operate at twenty feet, and can Snellen's type be regarded as such an infallible test that it forms the basis of a rule for State physical examinations? With the right eye (the offending one) alone, and without glass, I could quite see to tie an artery, and manage well enough were I deprived of the other in the ordinary affairs of life. All who would enter—ye even with suspicious saphenas and protuberant pampiniform plexuses,—be not disheartened; for the tests are not hard ones, neither will ye be rejected, for such to my knowledge have triumphed. But look to your eyes before starting, else all your stiff cramming may go for what it is probably worth—viz., nothing, which is a nuisance; and you are prohibited from competing in a career you have chosen which—well, is much worse. After all, when the disappointing draught is swallowed, the aftertaste is not so bad. One is free of the fetish which invariably has the "honour of being your obedient servant," which goes by the name of "red tape," and which in the matter of Snellen's type at twenty feet, with one eye winking wickedly, is an extraordinary little fetish indeed, and not to be denied. Sour grapes? Perhaps.—Yours faithfully,

Brighton, Aug. 2nd. J. E. S. BARNETT.

MEDICAL BOOKKEEPING.

A CORRESPONDENT desires information as to the best and simplest system of bookkeeping for a non-dispensing practice.

Newcomer.—There is no rigid rule. It is better to follow the custom which has hitherto obtained in the locality.

Jurist.—We are not aware of any decision having been given in reference to the point, which is a purely legal one.

Dr. J. Phillips.—The paper will be inserted in an early number.

"CURIOUS CASE OF CONGENITAL DEFORMITY."

To the Editors of THE LANCET.

SIRS,—In reference to the case described by Dr. Wallace of Rugby under the above title in your issue of Aug. 30th I beg to report that a very similar case came under my own observation in the early part of last year. The abortive supernumerary digit was attached by a short pedicle of skin to about the middle of the proximal phalanx of the little finger. The nail was well formed. Nothing abnormal was noticed about the other hand. I cannot conceive that the umbilical cord could be a factor in the production of such a condition, especially in Dr. Wallace's case, where there was a distinct attempt at bilateral uniformity. When nature deviates from her normal course it is difficult to gauge her wanderings; but one can hardly imagine her vagaries extending so far as to establish one abnormality in order to arrest another, which would be the case if the cord were twisted round a supernumerary digit (or two), producing amputation. I think the absence of bone will suffice to account for the arrest of development, and also for the pedunculated condition of the abnormal digits in these cases. I am, Sirs, yours obediently,

E. ATHERDEN THOMPSON, L.R.C.P., M.R.C.S.

Kirkham, Lancs, Sept. 4th, 1890.

THE GRIEVANCES OF THE ARMY MEDICAL OFFICERS.

OUR contemporary, *Mr. Punch*, sets forth in the present issue, with his usual felicity and humour, some of the grievances of the medical officers of the Army and Navy Departments, and propounds a most effectual cure for the same. He publishes an account of an interview which a medical officer, with a martial manner and well set up, has with "Mr. Commissioner *Punch*," to whom he complains that, although he may fairly claim to be a soldier by reason of his capacity as surgeon in the army, and as having to risk his life, not only on the battle-field, but in the fever wards of a hospital, he is still looked upon and treated as an inferior being by the youngest subaltern in the service. The officer asks the good services of the "Commissioner" to obtain for his class greater recognition in the army. The "Commissioner' thinks that the title secured by scientific attainments ought to take precedence of all others more easily obtained. To this the medical officer replies that in a college common-room that is so, but not at the mess table of a depôt centre. After further conversation the "Commissioner" cannot see, if medical officers are good drills and have some knowledge of the internal economy of a regiment and the rudiments of military law, why they should not enjoy the rank to which they aspire. He wishes them every success in their application, at the same time informing them that after all they are masters of the situation, and, with a sly twinkle, adds: "If your superior officers are unreasonable—physic them."

Mr. J. R. Nations.—The question is referred to in an annotation in our present issue.

THE VACCINATION COMMISSION.

To the Editors of THE LANCET.

SIRS,—I have sent to-day to Lord Herschell, chairman of the Royal Commission on Vaccination, the following lines, which I shall be most grateful to you to publish in the next number of your estimable paper.

I remain, Sirs, yours truly,

Brussels, Aug. 17th, 1890. DR. WARLOMONT.

"Brussels, Aug. 17th, 1890.

"MY LORD,—In the second Report of the Royal Commission on Vaccination Mr. Robert Cory expressed upon the vaccine delivered by my Institute some observations I am obliged to contradict. Mr. Cory states that my vaccine usually produces inflamed vesicles, and pretends that I only gather the lymph on the eighth day, which would be the cause of it. In the 'Manual of Animal Vaccination' (Churchill, London, 1885), p. 116, I have written the following lines:—'To use advantageously animal vaccine, either for vaccination or for preserving, it is necessary to choose the opportune moment. But this moment, which experience alone teaches us to recognise promptly, and as during which the pale areola has its transparent appearance and silvery colour, varies according to the temperature. In summer it most frequently arrives during the course of the fifth day; in winter during that of the sixth. There may be a margin of twenty-four hours, during which the matter remains transparent, but we must not reckon upon it. The most favourable moment approaches most nearly to that when the silvery tint has just commenced to show itself, under the guise of a little white border, parallel to the incision, or rather to the cicatrix which replaces it.' If Mr. Cory's assertion—that is to say, that the vaccine of my Institute is gathered on the eighth day—were exact, I should be acting in opposition to my own principles, which have been known and accepted throughout the world for twenty-five years. Is it likely? No. And it is because since many years my eye has been accustomed to the choice of the opportune moment that my vaccine, always gathered and prepared at the right time, has won its reputation, which Mr. Cory's affirmation will not shake. Mr. Cory is badly informed, and I regret it for him. Mr. Cory also speaks of inflamed vesicles. How can he ignore that, whichever is the lymph used, one must take into account such accidents, rare and usually very slight, and take into consideration the constitution of the patient and the operator's lancet.

"I remain, my lord, yours respectfully,

"DOCTEUR WARLOMONT,

"Directeur de l'Institut Vaccinal de Belgique.

"To the Right Honorable the Lord Herschell, Chairman of the Royal Commission on Vaccination."

"TWINS—ONE A MONSTROSITY."

To the Editors of THE LANCET.

SIRS,—The fact that one twin may be a monstrosity, and that the latest born, is not an unusual occurrence, as suggested at page 478 of THE LANCET; this may be established by a reference to the "Medical Digest," Section 1580:1.—I am, Sirs, yours obediently,

Boundary-rd., N.W., Sept. 10th, 1890. RICHD. NEALE, M.D.Lond.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. A. G. Bateman, London; Dr. Neale, London; Dr. H. Appleton, Staines; Mr. White, Guildford; Dr. T. Harris, London; Messrs. G. L. Daube and Co., Frankfort; Mr. J. Bell, Richmond, Yorks; Messrs. Blondeau et Cie., London; Mr. Griffey, London; Dr. Blair; Messrs. Cassell and Co., London; Dr. Brooks, Brighton; Mr. Evans, London; M. Fernand Xau, Paris; Miss Hooper, London; Messrs. Burroughs, Wellcome, and Co., London; Mr. Frost, London; M. Durand, Paris; Messrs. Pimms and Co., London; Dr. Coghill, Birmingham; Messrs. Maw, Son, and Thompson, London; Mr. G. Norrie, Copenhagen; Messrs. Hopkinson and Co., Nottingham; Mr. H. K. Lewis, London; Mr. F. Hudson Cox, London; Mr. Birchall, Liverpool; Messrs. R. A. Knight and Co., London; Mr. Waters, London; Mr. Lamonde; Messrs. Eason

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LETTERS, *each with enclosure*, are also acknowledged from—Dr. Waters, Liverpool; Mr. Naylor, Bolton; Mr. Bond, Cornwall; Messrs. Aitken and Andrews, Ticehurst; Mr. Coole, Horsham; Messrs. Steel and Jones, London; Mr. Marsh, St. Helens; Mrs. Delany; Mr. Wallis, West Chislehurst; Mr. Deacon, Manchester; Dr. Burland, N.B.; Mr. C. Jackson, London; Mr. Kneese, Bournemouth; Mr. Robertson, Paignton; Mr. Elliott, Gottingen; Mr. Purland, Woolwich; Mr. Garbutt, Gateshead; Mr. Knapp, Kingston-on-Thames; Mr. Barnby, Great Yarmouth; Mr. Moxon, Matlock; Mr. Twigg, Leeds; M. Olivier, Paris; Mr. Tyte, Minchinhampton; Mr. Davis, Bognor; Mr. Tully, Hastings; Mr. Kidston, Glasgow; Mr. Thorne, London; Dr. Lyon, Sheffield; Mr. Smith, Grimsby; Miss Minks, London; Mr. Harries, Llanelly; Mr. Ehrmann, Southam; Mr. Kelly, New York; Mr. Keely, Nottingham; Dr. Bryant, Tavistock; Miss Williams, Rhyl; Mr. Evans, Llanberis; Dr. Barnett, London; Mr. Murray, Strathy; Mrs. Lean, London; Dr. Powell, Everton; Dr. Mistri, Aden; Messrs. Street and Co., London; Mrs. Pasker, Nottingham; Mr. C. Wilkes, London; Mr. Hughes, Waenfawr; Dr. McDougall, Runcorn; Mr. Davies, Newport; Mr. J. Bate, Huddersfield; Messrs. Jarrold and Son, Great Yarmouth; Mr. Heywood, Manchester; Messrs. Wertheimer and Co., London; Mr. Humphreys, Carnarvon; Mr. D. McBrees, Machynlleth; Mr. Tate, Huddersfield; Mr. Hatcher, London; Mr. Murdock, Folkestone; Mr. Bayes, Wellingborough; Dr. Reid, N.B.; Mr. Bates, London; Mr. Barnett, London; Mr. Warner, Sheffield; Mr. Starkey, Northwich; Mr. Cochrane, Kirkcowan; Mr. Tidswell, Love; Suburb; M.D., Bucks; R. B., Dublin; C. H., London; School of Massage and Electricity, London; E. A., Harpenden; Alpha, Cheshire; Horses, London; S., London; Health, Bournemouth; Bonus, London; Beta, Maidenhead; D. C., London; Medicus, Maidstone; Hon. Sec., Southampton; Duplex, London; Carpe, London; Query, London; Alpha, Edinburgh; Medicus, Plymouth; Scope, London; M.O.H., Stockton-on-Tees; Doctor, London; Beta, Llanelly; F. J. A., Rhyl; W. H. D., Bristol; H. S., London; H., London; Ophthalmic, London; Taoro, London; Bertram, London; M.D., London; M.D., Bristol; James, London; Theta, Bournemouth; Physician, Bournemouth; Doctor, London; L. M., Manchester; Q., London.

NEWSPAPERS.—*National Review, The Arena, Journal of British and Foreign Health Resorts, City Press, Weekly Free Press, Hertfordshire Mercury, Windsor and Eton Express, Reading Mercury, Mining Journal, Leeds Mercury, Surrey Advertiser, Liverpool Daily Post, Liverpool Courier, Charity Record, Leslie's Illustrated Newspaper, Islington Gazette, Jamaica Gazette, &c.*, have been received.

Medical Diary for the ensuing Week.

Monday, September 15.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations daily at 10 A.M.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.

CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.

ST. MARK'S HOSPITAL.—Operations, 2.30 P.M.; Tuesday, 2.30 P.M.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.

UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; Thursday, 9 A.M.

Tuesday, September 16.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays at the same hour.

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic operations, 4 P.M.; Friday, 2 P.M.

CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electrotherapeutics, same day, 2 P.M.

Wednesday, September 17.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1 P.M. Operations by the Obstetric Physicians on Thursdays at 2 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.

CHARING-CROSS HOSPITAL.—Operations, 3 P.M., and on Thursday and Friday at the same hour.

ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.

LONDON HOSPITAL.—Operations, 2 P.M. Thursday & Saturday, same hour.

ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.

GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.

ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.

CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M.; Surgical Visits on Wednesday and Saturday at 9.15 A.M.

Thursday, September 18.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Ear and Throat Department, 9 A.M.

Friday, September 19.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Saturday, September 20.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.

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